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ABSTRACT

Describing conditions in education, this report focuses on trends at the elementary/secondary and higher education levels, current data on special programs and populations, and data illuminating current national concerns. Chapters 1 and 2 present data from a broad national perspective on trends in enrollment, resources and finances, and graduate performance and degrees. Central to both chapters is the enrollment decline and the changing composition of the student body. Chapter 3 describes participation in vocational coursework at the secondary and postsecondary education levels and shows the diversity among vocational education participants. Chapter 4 focuses on educationally disadvantaged adults. The number of adults with substandard educational levels is identified, and the relationship between low educational attainment, poverty, and race/ethnicity is explored. Addressing current issues in secondary education, chapter 5 describes high school dropout rates, reasons for leaving school before graduation, postsecondary plans of high school seniors, and the rate at which high school graduates took selected academic courses. Each chapter presents tables and charts of the data along with a narrative interpretation. The report provides an explanation of data sources, definitions of selected terms, and a cumulative index to the report from the 1981 through the present edition. (MD)

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The Condition of Education

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On The Inside

Elementary/Secondary Education

- Enrollment in the lower grades is projected to increase beginning in 1986, while in the upper grades it is expected to continue declining throughout the 1980's and into 1990 (entry 1.1).

- While school enrollment decreased, the number of handicapped children served in special education programs increased by 15 percent between 1976-77 and 1982-83. The learning disabled category showed the greatest increase (entry 1.6).

- Beginning in the mid-1980's, the demand for additional teachers is projected to exceed the supply of new teacher graduates. Two-thirds of this demand is expected to come from elementary schools (entry 1.12).

- Current expenditures per pupil were highest in Alaska and New York and lowest in Mississippi and Arkansas in 1981-82. From 1970-71 to 1981-82, Alaska and Oklahoma registered the largest increases, while New York and Georgia recorded the smallest (entry 1.14).

Higher Education

- In contrast to its expansion in the 1970's, higher education enrollment is projected to register some small declines throughout the 1980's and into the 1990's. The proportions of males, younger adults, and full-time students are expected to continue dropping (entry 2.2).

- Minorities represented about 14 percent of enrollment at 4-year institutions and about 20 percent at 2-year institutions in the fall of 1982, essentially unchanged from 1976. Non-resident aliens made up 4 and 1 percent of students at 4- and 2-year institutions, respectively (entry 2.5).

- When adjusted for inflation, higher education expenditures per full-time-equivalent student rose slightly from 1970-71 to 1979-80, but have fallen somewhat since then (entry 2.9).

- Bachelor's degrees in business and management almost doubled between 1970-71 and 1981-82, making this field the largest undergraduate discipline in 1981-82. Education degrees, by contrast, declined by 43 percent at the bachelor's level over this period (entry 2.12).

- Women comprised the majority of bachelor's and master's degree recipients in 1981-82 and are projected to earn almost half of the doctorates and one-third of the first-professional degrees by 1992-93 (entries 2.11, 2.14, 2.15, and 2.16).

Vocational Education

- The average public high school graduate earned twice as many credits in vocational education as did the average private school graduate. In public schools, greater vocational participation was associated with smaller schools and schools set in rural communities (entry 3.2).

- The majority of participants in postsecondary vocational courses offered by noncollegiate providers were 25 years old or over and both male and female participants were most likely to be employed full-time (entry 3.9).

Educationally Disadvantaged Adults

- For young or old, black or white, persons with less than a high school education were generally twice as likely to be below the poverty level as persons with more education (entry 4.3).

- The proportion of adults without a high school diploma who were enrolled in education was small, only 2 percent. Younger adults who participated were more likely to be enrolled in elementary/secondary schools, older participants in adult education courses (entry 4.6).

Secondary Education

- Among the sophomore class of 1980, American Indians/Alaskan Natives had the highest dropout rate (29 percent) of any racial/ethnic group. Higher dropout rates were also associated with low socioeconomic status, poor academic performance, and enrollment in non-academic programs (entry 5.1).

- The percentage of schools using microcomputers more than doubled at the junior high level and increased by 61 percent at the senior high level between 1982 and 1983. Microcomputer users in secondary schools generally spent more time in programming and computer literacy instruction than in other computer activities (entry 5.10).

- Between 1980 and 1983, 20 States and the District of Columbia proposed or approved increases in the number of mathematics units required for high school graduation; 12 States approved or proposed changes in the number of science credits required (entry 5.12).

The Condition of Education

1984 Edition

Statistical Report
National Center for Education Statistics

Edited by Valena White Plisko

U.S. Department of Education
T.H. Bell, Secretary

Office of Educational Research and Improvement
Donald J. Senese, Assistant Secretary

National Center for Education Statistics
Marie D. Eldridge, Administrator

National Center for Education Statistics

"The purpose of the Center shall be to collect and disseminate statistics and other data related to education in the United States and in other nations. The Center shall . . . collect, collate, and from time to time, report full and complete statistics on the conditions of education in the United States; conduct and publish reports on specialized analyses of the meaning and significance of such statistics; . . . and review and report on education activities in foreign countries."—Section 406 (b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e-1).

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Administrator's Statement

"Why do we seek to know the condition of education? In the answer to this question will be found the reasons for the elaborate statistical record which forms a feature of all official school reports. We take an account of education that we may know whether it is sufficient in amount and good in quality."

—Henry Barnard
First Commissioner of Education, 1880

The mission of the National Center for Education Statistics is to describe where we are and where we are heading in education in the Nation, providing a base of information upon which sound discussion and decisions can be founded. Through its data collection and analysis activities, the Center has attempted to inform, with accurate and timely statistics, the key educational concerns of Federal, State, and local policymakers, educators, and the general public. This report, the tenth in the annual series, is a major response to the NCES mandate to "report full and complete statistics on the conditions of education in the United States..." (General Education Provisions Act, as amended).

Data for the *Condition of Education* are drawn from the Center's ongoing program of education statistics as well as outside sources. The Center's program is directed towards maintaining its core statistical systems and collecting data to define more fully the educational enterprise in these United States. At the Center's current and proposed FY85 budget level of $8,747,000, the major components of this program are:

- Elementary/Secondary Education - data collected annually on public school enrollments, staff, and finances; in alternating years, surveys of special attributes of public and private schools; and data collected biennially on teacher shortage and demand.
- Higher Education - data collected annually on institutions, enrollments, degrees, salaries, and finances; cyclical surveys of facilities and the residence and migration of students; and data collected biennially on the employment of recent college graduates.
- Vocational and Adult Education - data collected annually on programs, enrollments, and other topics at the secondary and postsecondary levels; data collected triennially on participation in adult education.
- Longitudinal Studies - data collected on the transition from school to work and policy issues from three cohorts of students—1972 seniors (fifth follow-up in 1986), 1980 sophomores and 1980 seniors (second follow-up in 1984 with biennial follow-ups until 1988).

Data are made available to users through a variety of means: publications such as this report, tapes and special tabulations, and responses to inquiries received by the Statistical Information Office. In addition, special data collections on policy issues are provided with our Fast Response Survey System.

Drawing upon these many NCES data sources and others, *The Condition of Education* should interest the public as well as policymakers, researchers, and educators. The report uses a chartbook format to convey statistical information in a non-technical way to a general audience. Along with the narrative, each entry on a topic consists of a table and a chart presented together. The data highlighted in the chart, and briefly described in a statement accompanying the chart, are extracted from the facing table. Data used in the chart appear in boldface type in the table, which may be readily consulted for further information.

In this report, an effort was made to address a broad range of significant issues at various levels of education. Many of the statistics presented here relate to issues not included in previous editions of the report. To aid readers desiring statistics on other topics or more data on a particular issue, a cumulative index lists topics and data shown since 1981, as well as in the present edition.

Marie D. Eldridge

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Table of Contents

Page

Introduction
by Vance Grant and Valena Plisko 1

Overview of Trends

1. Elementary/Secondary Education
by Audrey Weinberg and Debra Gerald, and by Esther Tron on Finance 3
Enrollment 3
Resources 6
Performance 12

2. Higher Education
by Debra Gerald and Audrey Weinberg, and by Thomas Snyder on Finance 61
Enrollment 61
Resources 63
Degrees 65

Special Programs and Populations

3. Vocational Education: Secondary and Postsecondary Participation
by Richard E. Whalen and Maria Owings 103
Employment Outlook 103
Secondary Vocational Education 104
Postsecondary Vocational Education 106

4. Educationally Disadvantaged Adults
by Larry Suter and Valena Plisko 129
Definitions of Illiteracy 129
Size of Population 129
Participation in Education Programs 132

Special Emphasis

5. Secondary Education: Student Flows, Course Participation, and State Requirements
by Richard E. Whalen 149
Student Flows 149
Course Participation 150
State Requirements 152

Appendix
Data Sources 183
Definitions of Selected Terms 199

Cumulative Index 211

Table of Entries

Page

Chapter 1: Elementary/Secondary Education

Enrollment

1.1 Enrollment in Regular Elementary/Secondary Day Schools, by Grade Level 15
1.2 Percent Change in Public Elementary/Secondary School Enrollment Between 1970 and 1982, by State 17
1.3 Minority Enrollment as Percent of Public Elementary/Secondary School Enrollment, by State 19
1.4 Percent of 5- to 17-Year-Olds That Speak a Language Other Than English at Home 21
1.5 Estimated Language-Minority Status and English Language Proficiency of Population 5 to 14 Years Old 23
1.6 Persons 3 to 21 Years Old Served in Special Education Programs for the Handicapped 25
1.7 Preprimary Enrollment, by Control of School 27
1.8 Public Preprimary Enrollment Compared to 1st Grade Enrollment 29

Resources

1.9 Number of Public Elementary/Secondary Schools, by Level of School and Grade Span: 1980-81 31
1.10 Elementary/Secondary Classroom Teachers, by Level 33
1.11 Classroom Teachers Per 1,000 Students in Elementary/Secondary Schools 35
1.12 Estimated Teacher Supply and Estimated Demand for Additional Teachers 37
1.13 Percent Change in Number of Public Elementary/Secondary Classroom Teachers Between 1970 and 1981, by State 39
1.14 Current Expenditures per Pupil in Public Elementary/Secondary Schools 41
1.15 Per Pupil Expenditures and per Capita Income Indexed to National Average, by State: 1981-82 43
1.16 State Share of Public Elementary/Secondary School Revenues 45
1.17 Federal Education Revenues per Pupil Indexed to National Average 47
1.18 Expenditures for Public Elementary/Secondary Education 49
1.19 Average Annual Salary of Classroom Teachers in Public Elementary/Secondary Schools 51

Performance

1.20 Change From 1978 to 1982 in Mathematics Performance of 9-, 13-, and 17-Year-Olds on All Exercises 53
1.21 Change From 1978 to 1982 in Mathematics Performance of 9-, 13-, and 17-Year-Olds on Exercises of Knowledge, Skills, Understanding, and Application 55
1.22 Change From 1977 to 1982 in Average Science Performance of 9-, 13-, and 17-Year-Olds 57
1.23 High School Graduates 59

Chapter 2: Higher Education

Enrollment

2.1 Participants in Postsecondary Education, by Type of Provider and Credit Goal 69
2.2 Enrollment Trends in Institutions of Higher Education, by Student and Institutional Characteristics 71
2.3 Anticipated Enrollment Patterns in Higher Education 73

Table of Entries (Continued)

Page

2.4 Total Enrollment in Higher Education, by Control and Classification of Institution: Fall 1982 75
2.5 Minority and Non-Resident Alien Representation in Total Higher Education Enrollment 77

Resources

2.6 Senior Instructional Staff in Institutions of Higher Education 79
2.7 Sources of Current Funds Revenues for Institutions of Higher Education 81
2.8 Annual Percent Change in Average Undergraduate Tuition and Room and Board Rates, by Control of Institution 83
2.9 Higher Education Current Funds Expenditures per Full-Time-Equivalent Student 85

Degrees

2.10 Minority and Non-Resident Alien Share of Earned Degrees Conferred, by Level of Degree 87
2.11 Bachelor's Degrees Conferred, by Sex of Recipient 89
2.12 Earned Degrees Conferred by Level and Largest Discipline Divisions in 1981-82 91
2.13 Percent of Earned Degrees Awarded to Females, by Level and in Largest Discipline Divisions 93
2.14 Master's Degrees Conferred, by Sex of Recipient 95
2.15 Doctor's Degrees Conferred, by Sex of Recipient 97
2.16 First-Professional Degrees Conferred, by Sex of Recipient 99
2.17 First-Professional Degrees Conferred in Largest Discipline Specialties 101

Chapter 3: Vocational Education: Secondary and Postsecondary Participation

Employment Outlook

3.1 Actual 1982 and Projected 1995 Employment and Change Projected in Employment From 1982 to 1995 111

Secondary Vocational Education

3.2 Average Units Earned in Vocational Courses by 1982 High School Graduates 113
3.3 Average Units Earned in Vocational Courses by 1982 Public High School Graduates, by Racial/Ethnic and Standardized Test Performance Group, and by Socioeconomic Status 115
3.4 Average Units Earned by 1982 Public High School Graduates in Selected Vocational Courses, by Self-Reported High School Program 117
3.5 Average Occupational and Exploratory Vocational Units Earned by 1982 Public High School Graduates Who Reported a Vocational Specialty 119
3.6 Occupational Classification of Most Recent Job of 17- to 21-Year-Old High School Graduates 121

Postsecondary Vocational Education

3.7 Postsecondary School Enrollment of 17- to 21-Year-Old High School Graduates 123
3.8 Persons Enrolled in College and Working Toward a Vocational Certificate, Associate Occupational Degree, or Other Award Based on Occupational Curriculum 125
3.9 Persons Taking Courses in a Noncollegiate Environment for a Vocational Certificate or Diploma 127

Table of Entries (Continued)

Page

Chapter 4: Educationally Disadvantaged Adults

Size of Population

4.1 Persons 25 Years Old and Over With Less Than 9 and Less Than 12 Years of School Completed, by State ... 135
4.2 Persons 25 Years Old and Over With Less Than 9 and Less Than 12 Years of School Completed, by Race/Ethnicity and Age Group ... 137
4.3 Poverty Rate of Persons 22 Years Old and Over, by Years of School Completed ... 139
4.4 Foreign Born Population and Recent Immigrants: 1980 ... 141
4.5 Persons 18 Years Old and Over Who Reported Limited English Speaking Ability ... 143

Participation in Education Programs

4.6 Educational Participation of Persons 20 Years Old and Over, With Less Than 12 Years of School Completed, by Age Group ... 145
4.7 Age Distribution of Persons Taking GED Tests: 1982 ... 147

Chapter 5: Secondary Education: Student Flows, Course Participation, and State Requirements

Student Flows

5.1 Dropout Rates of 1980 High School Sophomores ... 155
5.2 Reasons Cited by 1980 Sophomore Dropouts for Leaving High School Before Graduation ... 157
5.3 Distribution of 1972 and 1980 High School Seniors Expecting to Attain Designated Levels of Education ... 159
5.4 Postsecondary Education Participation of High School Graduates Immediately Following Graduation ... 161

Course Participation

5.5 Carnegie Units Earned in Mathematics and Science by 1982 High School Graduates ... 163
5.6 Percent of 1982 High School Graduates Who Met Various Sets of Curricular Recommendations of the National Commission on Excellence in Education ... 165
5.7 Percent of 1982 High School Graduates Who Met Curricular Recommendations of the National Commission on Excellence in Education, by Educational Aspiration ... 167
5.8 Average Number of Carnegie Units Earned in Basic Academic Subjects by 1982 High School Graduates ... 169
5.9 Average Number of Carnegie Units Earned in Selected Subjects by 1982 High School Graduates ... 171
5.10 Use of Microcomputers in Elementary and Secondary Schools ... 173

State Requirements

5.11 States That Have Approved or Proposed Changes in Requirements for High School Graduation Between 1980 and 1983 ... 175
5.12 States That Approved or Proposed Changes in Mathematics and Science Requirements for High School Graduation ... 177
5.13 Minimum-Competency Testing for High School Graduation ... 179
5.14 State University Admissions Requirements ... 181

The Condition of Education

American education, like the American society from which it derives, is characterized by its diversity and complexity. Designed as it is to serve a broad spectrum of the population, it must meet the needs of people who differ widely in age, background, ability, educational attainment, and vocational goals. Demographic and social trends in recent years have contributed to a rapidly changing environment in which elementary and secondary school enrollments have been contracting at the same time that higher education has continued to expand.

This annual report on *The Condition of Education* might more aptly be entitled *Conditions in Education* to reflect the many currents running through the various levels and sectors of American education today. The report attempts to follow some of these major trends in education over the past decade, and where projections are available, to show the outlook for the near future.

While statistics are available with which to track broad trends, such as enrollment changes, information is more limited in several significant areas, including, for example, adult illiteracy. Generally, more abundant data exist on students and resources, than on educational processes and outcomes. The report presents both relatively long-standing statistical series and the best estimates of the National Center for Education Statistics in areas where data are scarce. When no single statistic is available to describe particular conditions, alternate indicators have been developed. In describing the size of the adult population with educational disadvantages, for instance, two proxy measures are shown, one defining the relevant population as those with less than 9 years of school completed, and the other as those with less than 12 years. By presenting the available information, however sketchy in certain areas, the report points out the need for further data and analysis. As the flow of information improves and as better indicators are developed, *The Condition of Education* will incorporate them into a consistent series of core statistics to appear in future annual editions.

The report is divided into three sections: the first provides an overview of the trends at the elementary/secondary and higher education levels; the second focuses on current data on special programs and populations; and the third highlights data illuminating current national concerns.

Overview of Trends in Education

Chapter 1 on elementary/secondary education and Chapter 2 on higher education present data describing, as simply as possible, trends and developments in the major components of education—enrollments, resources including staffing and finances, and graduates. The view is from a broad national perspective, surveying changes over the last decade and, where projections are available, into the near future. Data on changes in these components are also shown by State at the elementary/secondary level and by institutional type at the higher education level. These chapters provide the framework for building a series of educational indicators to appear in updated form in subsequent editions.

Central to both chapters is the fact of enrollment decline, experienced in elementary/secondary schools beginning in the 1970's and expected to affect higher education in the 1980's. Evidence of the impact of enrollment change on resources runs throughout these chapters.

Another significant development at both levels has been the changing composition of the student body. Chapter 1 presents data over time on minority enrollment, language groups, and special education participants at the elementary/secondary level. Chapter 2 presents trends and projections in the college enrollments of women, older students, and part-time students, increases that have helped forestall the overall enrollment decline and may minimize its impact. The phenomenal growth in female participation is reflected further in the data on earned degrees which show the tremendous gains made by female degree recipients in the recent period.

Statistics on Special Programs and Populations

The report also highlights the diversity of American society and its educational system by focusing on current statistics on special programs and populations. Chapter 3

on vocational education describes participation in vocational coursework at the secondary and postsecondary education levels. Newly released data suggest the diversity of the vocational education enterprise by showing the range in coursetaking by different types of students in different schools. High school transcripts indicate that recent graduates may have typically taken from a few courses to upwards of one-third of their total coursework in vocational education, depending on their school, program, and personal characteristics.

This chapter also shows the considerable diversity among vocational education participants in their goals and backgrounds at the postsecondary level. Although some postsecondary participants come directly from high school, there are many enrolled who have been out of school for some time. Adults in postsecondary vocational programs may be already in the labor force or they may be taking training to enter. The diverse needs of the students are reflected in the wide range of programs participated in at the postsecondary level.

The focus of Chapter 4 is on educationally disadvantaged adults—their numbers, characteristics, and participation in programs designed to overcome their deficiencies. Data from the decennial censuses of population are used to identify the number of adults with substandard levels of educational attainment. The background characteristics of the target population are described, and the relationships between low educational attainment, poverty, and race/ethnicity are explored.

This chapter also looks at the proportion of the population which reported difficulty with the English language. With higher levels of immigration in recent years, this group is becoming increasingly an important segment of the population. The chapter concludes with a profile of participants in high school equivalency programs, and in adult education courses in general.

Special Emphasis on Secondary Education

Chapter 5 addresses some of the current issues in secondary education by describing high school dropout rates, reasons for leaving school before graduation, and postsecondary plans of high school seniors. A section on course participation looks at the rate at which high school graduates took selected academic courses. It also measures the courses completed by 1982 high school graduates against the curricular recommendations set forth by the National Commission on Excellence in Education. The data suggest that in order to meet the standards of the Commission, an increased emphasis on basic academic courses will be required.

The chapter concludes with a State-by-State comparison of high school graduation requirements and initiatives, a listing of States using minimum competency testing, and a tabulation of the changes that State universities are making in their requirements for admission.

Chapter 1
Elementary/Secondary Education

This chapter profiles national trends and developments in elementary/secondary education from the 1970's to the present and, where projections are available, into the next decade. The basic components of elementary/secondary education—students, resources, and performance—are each described in turn. Data over time are also presented by State to show the differential impact of change on enrollments, teachers, and finances. Trends in performance are broadly described in terms of high school graduation ratios and recent assessments of mathematics and science. Later chapters present more detailed information on high school completion and coursework.

Enrollment

Trends in Enrollment

Elementary/secondary education, having experienced enrollment growth in the 1950's and 1960's, met with unprecedented enrollment declines in the 1970's. From 1971 to 1982, total enrollment decreased steadily, reflecting the decline in the school-age population over that period. Enrollment is expected to continue falling until 1985, reaching 44.0 million (entry 1.1). Total enrollment is then expected to reverse its downward trend and increase slowly as the school-age population begins to grow. Total enrollment is projected to rise to 46.4 million by 1992, an increase of 1.6 million (4 percent) over 1982.

By grade level, enrollment trends are expected to contrast sharply as enrollments begin to increase in the lower grades and continue falling in the upper grades. Smaller birth cohorts entered the schools in the later half of the 1960's and reached the upper grades by 1977. Between 1970 and 1982, preprimary to 8th grade enrollment decreased from 36.6 million to 30.8 million, a 16 percent drop.

Enrollment in the lower grades (preprimary to 8th) is projected to decrease to 30.2 million in 1985 and then begin increasing in 1986. It is expected to reach 34.1 million by 1992, an increase of 11 percent from 1982. These gradual increases are projected as a result of slight rises in the number of annual births in recent years.

In the upper grades, a different pattern emerges. Between 1970 and 1982, 9th to 12th grade enrollment decreased from 14.6 million to 13.9 million, a drop of 5 percent. Over the 1980's and into the beginning of the next decade, 9th to 12th grade enrollment is projected to continue falling, reaching 12.3 million by 1992, a 12 percent decrease from 1982.

Both public and private schools registered enrollment declines between 1970 and 1982, but of different magnitude. In that period, public school enrollment fell 14 percent and is projected to decline even further to 39.0 million in 1985. It should then begin a slow rise to 41.1 million by 1992, a 4 percent increase over 1982. These trends—the drop between 1970 and 1982 and the gradual rise later—mirror those mentioned earlier for total enrollment. This is because public schools account for approximately 90 percent of total enrollment and so dominate the overall trend.

Private schools also recorded enrollment declines through the 1970's. Large decreases in Catholic school enrollment were offset considerably by rises in other private schools, resulting in a total decline of only 5 percent, from 5.4 million in 1970 to 5.1 million in 1982. By 1992, private school enrollment is projected to increase slightly to 5.3 million. At this time, private school enrollment is projected to account for 11 percent of the total enrollment in elementary/secondary schools, a proportion unchanged from 1982 and slightly up from 10.5 percent in 1970. These projections are based on past trends and school-age population projections and do not take into account the effects that policy decisions and individual choice may have on enrollments.

Change in Public School Enrollment, by State

In all, public school systems in 41 States and the District of Columbia experienced enrollment declines between Fall 1970 and Fall 1982 (entry 1.2). The States in the Northeast recorded the largest drops. Delaware, Connecticut, Rhode Island, South Dakota, and the District of Columbia experienced declines in public school enrollment of more than 25 percent. Of the nine States that

registered enrollment increases, six showed gains greater than 10 percent: Wyoming (23 percent), Utah (22 percent), Nevada (18 percent), Arizona (16 percent), Idaho (12 percent) and Alaska (11 percent).

Nationally, public preprimary to 8th grade enrollment declined by 17 percent while 9th to 12th grade enrollment decreased by 6 percent. In most States, the direction of change was the same in the lower and the upper grades; that is, declines at the elementary level were typically followed by declines at the secondary level. However, there were exceptions. Secondary enrollment increases were substantial in Alaska (37 percent) and Nevada (54 percent), while elementary enrollment changes were comparatively small (3 and 4 percent increases, respectively). Colorado, Georgia, Hawaii, Michigan, and South Carolina declined in total enrollment but the decline was confined to the lower grades. Idaho and Wyoming experienced a net increase in total enrollment, but this increase was limited to the lower level. Conversely, New Hampshire's total enrollment increased slightly, even though enrollment declined in the lower grades.

Change in Minority Composition of Public School Enrollment

In 1980, racial/ethnic minorities comprised 27 percent of the total enrollment in public elementary/secondary schools (entry 1.3). This proportion was 6 percentage points higher than the level of minority enrollment in 1970. The minority share of public enrollment varied considerably from State to State. Three States and the District of Columbia had greater than 50 percent minority enrollment: the District of Columbia (96 percent), Hawaii (75 percent), New Mexico (57 percent), and Mississippi (52 percent). Minority students comprised less than 5 percent of the total enrollment in some New England and West North Central States, and in West Virginia.

Comparing 1980 with 1970 data shows that the percent of minority enrollment has risen in most States. California experienced the greatest percentage point increase (16 percent). Eleven other States, across all regions, increased in minority representation more than the national average of 6 percentage points. Decreases of less than 2 percentage points occurred in four Southern States, Missouri, and Wyoming.

Racial/ethnic minorities were distributed along discernible regional lines. Black students, for example, accounted for 16 percent of total public school enrollment nationally but made up much larger proportions of the total public school enrollment in the District of Columbia (93 percent) and five Southern States: Mississippi (51 percent), South Carolina (43 percent), Louisiana (42 percent), Georgia (34 percent), and Alabama (33 percent). A similar pattern held for other minorities. Hispanic students, while representing 8 percent of total enrollment nationally, accounted for much larger proportions of total enrollment in a number of Western and Southwestern States: New Mexico (46 percent), Texas (30 percent), California (25 percent), Arizona (24 percent), and Colorado (15 percent). The only other State with more than 10 percent Hispanic enrollment was New York with 12 percent. Less than 2 percent of public school enrollment was represented by Asians or Pacific Islanders. Many of these students were concentrated in Hawaii, where they made up 71 percent of Hawaii's student enrollment, and in California (7 percent). American Indians/Alaskan Natives made up less than 1 percent of the Nation's enrollment but had a large concentration in Alaska where they comprised 21 percent of total enrollment.

Language-Minority Composition of School-Age Population

A clear regional picture also emerges of the school-age population that speaks a language other than English at home. Approximately 10 percent of the 5- to 17-year-old population was counted in the 1980 Census as speaking a non-English language at home (entry 1.4). This proportion ranged from less than 5 percent in a majority of States to sizable shares of the population in some. States with relatively small minority-language populations were located in the north central and southern inland regions. States with 15 percent or more minority-language children were generally located along the Mexican

border but also included New York. New Mexico had the highest percentage of children with non-English language backgrounds; more than one-third of its school-age residents were from homes in which a language other than English was spoken. California, New York, and Texas accounted for more than half of all the minority-language children. In comparison, these three States represented about one-fourth of the 5- to 17-year-old population.

Data from the 1982 Survey of English Language Proficiency add some detail and depth to this picture of language-minority children. These preliminary data indicate that the number of 5- to 14-year-olds who speak a language other than English at home has grown appreciably since 1976, while the number of other children in this age group has declined (entry 1.5). Between 1976 and 1982, language-minority children increased in number by some 27 percent, at the same time that the number of other children declined by about 13 percent. In 1982, approximately 4.6 million children were estimated to belong to households in which a language other than English was spoken, an increase of nearly 1 million from 1976. These minority-language children comprised an estimated 13 percent of the population 5 to 14 years old.

A special test of English proficiency administered with the survey has yielded preliminary results. They suggest the level of difficulty that minority-language children may have with English and other school work. About 59 percent of minority-language children in 1982 scored below the cut-off levels set for English proficiency. In comparison, approximately 42 percent of all other 5- to 14-year-olds fell below the cut-off scores. The same test administered in 1978 showed 63 percent of minority-language children scoring below the cut-offs. These data suggest that the proportion of minority-language children with limited-English proficiency appears to have decreased slightly between the two test years. Yet, the absolute numbers of minority-language children and those with limited English proficiency appear to have increased.

Trends in Special Education Participation

A major source of data on changes in participation in special education is the annual report prepared by each State education agency for the U.S. Office of Special Education and Rehabilitative Services. As of the 1982-83 school year, nearly 4.3 million persons 3 to 21 years old were reported to be receiving special education (entry 1.6). Between 1976-77, when the State counts were initiated, and 1982-83, the national total of handicapped children served annually increased by over half a million children, or 15 percent. Over the same time span, the total number of children enrolled in public elementary/secondary schools declined by about 10 percent (see entry 1.1). Thus, the proportion of children receiving special education, considered as a percentage of total public school enrollment, increased from about 8 percent in the 1976-77 school year to nearly 11 percent in 1982-83. Although the increases have continued into the early 1980's, the rate of increase from year to year has been slowing.

When the annual counts of persons in special education programs are broken down by type of handicapping condition, a more complex pattern of change emerges. The number of children receiving special instruction for specific learning disabilities rose sharply between 1976-77 and 1982-83, by some 119 percent. While the rate of increase from year to year in the numbers served slowed during the early 1980's, 7 percent more students received such services in 1982-83 than in 1981-82. The number of children receiving special instruction for the "seriously emotionally disturbed" also showed considerable growth over time, although not nearly as substantial as that for specific learning disabilities.

In contrast, the total number of students served for most other conditions generally declined from year to year between 1976-77 and 1982-83. The numbers of students receiving services for the speech impaired, hearing impaired, retarded, orthopedically handicapped, and visually handicapped all declined during this period.

These varying trends have had a noticeable impact on the composition of the special education population. The two largest categories of special education students in 1976-77 were the speech impaired, who made up 35 percent of all special education students, and the mentally retarded, who comprised 26 percent of the total. By

1982-83, these two groups had been displaced by the learning disabled category, which had grown from less than 22 percent of the special education population in 1976-77 to nearly 41 percent, while the speech impaired and mentally retarded had fallen to 27 percent and 18 percent respectively.

Trends in Preprimary Enrollment

Another area that experienced considerable growth during the 1970's was preprimary education. Over the past decade, enrollments in nursery schools and kindergartens increased significantly. From 1970 to 1982, public and private preprimary enrollment increased from 4.3 million to 5.5 million, an increase of 27 percent (entry 1.7). This increase occurred despite the 8 percent decline in the 3- to 5-year-old population over this period. As the preprimary-age population increases over the projection period, preprimary enrollment is anticipated to increase to 7.0 million by 1992, an increase of 28 percent from 1982.

Preprimary enrollment increased from 1970 to 1982 in both public and private nursery schools and kindergartens. Public enrollment increased from 3.0 million in 1970 to 3.5 million in 1982, a rise of 17 percent. By 1992, this number is expected to reach 4.3 million, an increase of 25 percent. Private enrollment climbed considerably more, from 1.3 million in 1970 to 2.0 million in 1982, an increase of 52 percent. By 1992, private preprimary enrollment is projected to reach 2.6 million, an increase of 34 percent. For both public and private schools, the major increases are projected for 3- and 4-year olds, since enrollment of 5-year-olds is already approaching 100 percent.

The employment of mothers with preschoolers has contributed to these trends and will continue to affect enrollment in the future. In addition, a growing recognition of the importance of early education may also be contributing to the increased numbers, as well as the availability of nursery and kindergarten classes. The increase in children of preprimary age, which began in 1980, is expected to boost these numbers still further.

Public Preprimary Enrollment Compared With First Grade Enrollment, by State

One way to measure the recent growth in public preprimary enrollment is to compare it with 1st grade enrollment (entry 1.8). In the fall of 1982, virtually as many children were being educated in public preprimary programs as were enrolled in 1st grade (97 percent). This recent high level of preprimary enrollment may be contrasted with the level it reached in 1970 when it represented about two-thirds of 1st grade enrollment.

Preprimary enrollment as a percent of 1st grade enrollment rose in almost all States during this period. Four Southern States (West Virginia, North Carolina, Kentucky, and Tennessee), along with New Mexico and North Dakota, showed an increase of more than 75 percentage points. Thirteen Southern States, five Western States, North Dakota, and Vermont had substantial increases in preprimary enrollment despite their declining 1st grade enrollments.

Resources

Schools

Change in Number of Public Schools

In 1980-81, public elementary/secondary schools numbered 85,900, representing a 5 percent decline from 1970-71 (entry 1.9). This decrease resulted from continued consolidation, school closings, and fewer school openings as enrollments declined.

Despite the contraction in the number of schools, the organizational diversity that existed in 1970-71 was maintained. Both the 1970-71 and 1980-81 surveys show almost every possible combination of grades in public schools. Undoubtedly, some of these atypical grade spans may have resulted from misclassification of schools. Even so, considerable variety is evident in the data. At each level—elementary, junior high/middle, and secondary—the most typical grade span represented less than half the schools and enrollments.

The drop in the number of elementary schools was more than twice the percentage decrease for all public schools. In schools organized from preprimary (or 1st) to 6th grade, the most typical elementary grade span, the decrease was even larger, 23 percent. Schools with grade

spans of preprimary (or 1st) to 7th and preprimary (or 1st) to 8th also showed relatively large declines. These declines coincide with the combining of the 6th grade with the 7th and 8th grades in many school systems and the growth of the middle school. Also, preprimary or 1st-grade-only schools grew in number, along with the category of schools with miscellaneous grade spans. Overall, fewer elementary schools comprised the public school system in 1980-81 than in the prior decade, and the average enrollment size declined as well.

At the junior high or middle school level, the overall increase in number of schools may be primarily attributed to the growth of schools with middle level grade spans: 5th to 8th, 6th to 8th, and 7th to 8th. The numbers with middle grade spans may have grown for both pedagogic and pragmatic reasons. In the 1960's, many educators, supported by research on the preadolescent, began to promote a distinctive instructional program for this age group. This educational basis for middle schools was further bolstered by the pragmatic need to establish new schools to relieve overcrowding as numbers in this age group swelled in the late 1960's. In the later 1970's, as enrollments declined, the middle school grade spans were used to consolidate grades into adequately sized units. Many school districts moved the 9th grade out of their junior high schools to maintain enrollments at the secondary level. While the junior high with a 7th to 9th grade span was still the most prevalent at the intermediate level, this category declined by 29 percent between 1970-71 and 1980-81. The average enrollment size for all categories of junior high or middle schools was smaller in 1980-81 than in the previous decade. Schools organized from 7th to 9th grade had an average enrollment size larger than schools with other grade spans at this level.

The number of secondary schools increased by 5 percent from 1970-71 to 1980-81. Schools with 9th to 12th grade spans, the most prevalent type, grew in number, while secondary schools with 7th to 12th grade spans and 10th to 12th grade spans declined. The average enrollment size increased slightly and was larger in schools with more limited grade spans.

Combined elementary/secondary schools, which comprised less than 2 percent of all schools, increased during the period by one-fifth. However, these schools served fewer children and had a smaller average enrollment size in 1980-81 than in 1970-71. Schools with unclassified lowest and highest grades numbered some 2,200 in both years. A majority of these schools were operated for special education students.

Teachers

Trends in Number of Teachers

In the 1970's, initial enrollment declines were not followed immediately by declines in the number of teachers employed. Not until the late 1970's did the number of classroom teachers begin to decline in the public schools and level off somewhat in the private schools (entry 1.10). In the public schools, increased staffing needs in special and bilingual education programs partially offset the reduced demand for teachers. Between 1970 and 1977, the number of classroom teachers in the public schools increased by 7 percent while enrollment declined by 5 percent. In the private schools, where enrollment decline wavered and staffing ratios improved rapidly, the number of classroom teachers increased by about one-fifth over the period.

In the late 1970's, severe budgetary constraints in the public schools slowed further improvement in teacher-pupil ratios and the expansion of student services. Consequently, the number of public school teachers began to decline after 1977, decreasing from 2.21 million in that year to 2.11 million in 1982. The number of private school teachers remained relatively constant over the period. The total number of teachers, public and private combined, declined from 2.49 million in 1977 to 2.40 million in 1982.

When elementary school enrollments begin climbing again in both sectors in the latter half of the 1980's, the number of classroom teachers is projected to increase again, reaching an all-time high of 2.62 million in 1992. The growth projected at the elementary school level may

mean that nearly 19 percent more elementary school classroom teachers will be working in 1992 than in 1982. Since enrollment increases will not reach the secondary level until after 1990, the number of secondary school classroom teachers is expected to continue declining through 1990. In the 1990's, growth in the number of teachers in secondary schools is expected to parallel the rise in the number of teachers in elementary schools in the mid-1980's.

Trends in Teacher-Pupil Ratios

These staffing trends are reflected in teacher-pupil ratios, which grew rapidly in the early 1970's and more slowly in the later period. The ratios also show differences over time between public and private schools. At the start of the 1970's, teacher-pupil ratios (i.e., the number of teachers per 1,000 students) were somewhat higher in public elementary schools than in private elementary schools (entry 1.11). However, this pattern was reversed by the second half of the decade when the ratios in elementary schools rose more rapidly in the private sector. Enrollment in Catholic schools, with traditionally lower teacher-pupil ratios, declined relative to enrollment in other private schools and this decline had the effect of raising total staffing levels in the private sector. In addition, Catholic schools during this period increased teacher-pupil ratios to levels comparable with those of public schools.

In the same period, public secondary schools exhibited lower teacher-pupil ratios than private schools; that is, fewer teachers were assigned to students in public secondary schools than in private secondary schools. In the projected period, teacher-pupil ratios are expected to rise more slowly at both levels and in both sectors.

Trends in Teacher Demand and Supply

The total annual demand for additional teachers includes those needed to respond to changes in enrollment and to changes in teacher-student ratios and to replace teachers leaving the profession (teacher turnover). The cumulative demand for additional teachers fell from 875,000 in the 5-year period 1973 to 1977 to 647,000 in the 1978 to 1982 period (entry 1.12). During the current 5-year period (1983 to 1987), when enrollment is expected to bottom out, the demand for additional teachers is expected to increase slightly to 777,000. In the late 1980's and early 1990's, enrollment is projected to increase steadily. Therefore, the demand for additional teachers between 1988 and 1992 is expected to jump to 924,000. This represents a projected increase from an average 129,000 additional teachers needed each year between 1978 and 1982 to an average 185,000 in the 1988 to 1992 period. These demand projections are based on the assumptions that total enrollment will rise, teacher-pupil ratios will improve only slightly, and the turnover of teachers will remain constant at an estimated 6 percent. If these conditions are altered, the projections may also change.

Between 1973 and 1977, almost half (45 percent) of the demand for additional teachers came from secondary schools as enrollments declined at the elementary level but continued to rise at the secondary level. When enrollments began falling in secondary schools in the latter half of the 1970's, the demand for additional teachers in the schools also began a sharp decline. The drop was more pronounced than the earlier decline in demand for elementary school teachers. This suggests that the demand for additional teachers at the secondary school level is more responsive to enrollment decline than at the elementary school level. As a result, the secondary school proportion of the total demand for additional teachers dropped to less than 40 percent between 1978 and 1982 and is projected to remain at that level in the 1983 to 1987 period. Between 1988 and 1992, as enrollments in secondary school bottom out, only 31 percent of the total demand for additional teachers is projected to be in secondary schools.

Projecting the supply of additional teachers is even less certain than estimating demand. The supply consists of new teacher graduates and a reserve pool of former teacher graduates and former teachers. From 1970 to 1982, the annual supply of newly qualified teacher graduates decreased from 284,000 to an estimated 143,000. As a percent of bachelor's degree recipients, new teacher

graduates dropped from 34 percent to 15 percent over the period. Should the smaller percentage remain fairly stable over the next 10 years, the supply of new teacher graduates will also remain fairly stable at about 140,000 per year. At this level, the supply of new teacher graduates could equal about 93 percent of the projected demand for additional teachers between 1983 and 1987. However, in the following 5-year period, the supply of new teacher graduates would only equal about 75 percent of the demand for additional teachers. Large numbers of teachers would, therefore, have to be hired from the reserve pool.

If college students respond to the projected shortage of new teacher graduates in the late 1980's and early 1990's by increasing their enrollment in teacher preparation programs, then the projected shortage may not occur. A gradual increase from the current 15 percent of bachelor's degree recipients in 1982 to about 21 percent in 1992 would probably be sufficient to offset an overall shortage.

However, should increasing numbers of college students continue to choose careers in other fields because of perceived better salaries and working conditions, then the shortage of new teacher graduates could become quite severe. Should the percentage of bachelor's degrees in teacher preparatory programs fall gradually to about 11 percent in 1992, then the supply of new teacher graduates could equal less than 60 percent of the projected demand for additional teachers between 1988 and 1992.

These teacher supply and demand projections deal only with aggregate figures for the entire Nation and for all teaching fields. Even during periods of general nationwide surpluses, teacher shortages may occur in some geographic locations and in some subject fields. A similar situation may exist during periods of overall shortages, when teachers in some locations or teaching fields may be unable to find teaching openings.

Change in Number of Public School Teachers, by State

After reaching an all-time high in 1977, the number of public elementary/secondary school teachers began declining but was still 3 percent larger in 1981 than in 1976. Although the number of teachers appears to be relatively stable nationally between the earlier and later years, the percent changes among the States varied considerably (entry 1.13). Decreases in the number of classroom teachers occurred in 16 States and the District of Columbia. With the exception of California and Hawaii, these States were located in the Northeast and North Central regions. Generally, these States also experienced relatively large enrollment declines (see entry 1.2). Twice as many States increased their number of teachers as those that decreased. The 13 States in which the number of teachers increased 20 percent or more included Western and Southern States and New Hampshire. With the exception of Utah, all States with enrollment increases also had increases in the number of teachers of 20 percent or more.

Finance

Change in Expenditures per Pupil, by State

Current expenditures per pupil averaged $2,724 in 1981-82, while a decade earlier they had amounted to $911 (entry 1.14). When adjusted for inflation, the increase was 34 percent. States did not share equally in this growth: while expenditures in some States grew at rates almost double the national average, expenditure growth in a few clearly lagged. As will be shown, educational expenditures are tied to the cost-of-living in States, and above-average increases often reflect growing economies. States with the highest expenditure growth rates included Alaska, Colorado, Massachusetts, Montana, Oklahoma, and Wyoming. The result was to push expenditures in all these States (except Oklahoma) to levels that were well above average. In Oklahoma, expenditures per pupil grew from a low of 75 percent of the U.S. average in 1970-71 to almost the average level in 1981-82. States with the lowest growth rates were Georgia and New York, though the impact on expenditure levels was markedly different in these two States. Expenditures in Georgia lagged further behind the national average, while in New York per pupil expenditures

remained above average, though slipping from 72 percent above the mean in 1970-71 to 57 percent above a decade later.

The number of States spending well above the national average has grown in recent years, while the number of low-spending States has remained unchanged. In 1970-71, 17 States had per pupil expenditures 15 percent or more below the national mean, while 5 States exceeded the average by 15 percent or more. In 1981-82, 14 States were spending 15 percent or more below average, but those spending more than 15 percent above the national average had grown to 11. At the same time, the range in expenditures appears to have shrunk. In 1970-71, expenditures per pupil ranged from a low of $600 to a high of $1,567, or from 66 percent to 172 percent of the national average. A decade later, this range extended from a low of 68 percent to a high of 157 percent of the national average, excluding Alaska, where real expenditures had almost doubled.

Expenditures per Pupil and State Fiscal and Demographic Features

Declining enrollments, as well as increases in real revenue, accounted for the growth in per pupil expenditures. Nationally, declining enrollments that were characteristic of the decade contributed to rising per pupil expenditures, since available revenues were spread among a shrinking student body. Average daily membership in public schools declined from approximately 46 million in the early 1970's to under 40 million by the 1980's, or about 14 percent. In this same time span, real revenues for public schools increased by 5 percent, also contributing to rising per pupil expenditures.

Fiscal and demographic features of States were examined in an attempt to identify patterns that influence school spending and may account for some of the differences in school expenditures among States.* To a large extent, differences in per pupil expenditures among States reflect wealth (and price) differences as measured by per capita incomes. In 1971-72, 20 States had per capita incomes 10 percent or more below the national average (entry 1.15). Of these States, 16 had per pupil expenditures that were also 10 percent or more below the national mean. A decade later, of 16 States with per capita incomes 10 percent or more below the national average, 14 had per pupil expenditures below the mean by 10 percent or more.

School tax efforts are based on State/local revenues for schools as a proportion of income in each State (effort = revenues/income). This measure of effort declined nationally from 5.1 percent to 4.4 percent between 1971-72 and 1981-82. This decrease reflected enrollment declines that led States to allocate less of their resources for elementary/secondary education. In addition, a 6-percent rise in per capita income that occurred during this period meant that equivalent school revenues could be raised with lower tax efforts. However, not all States were able to reduce tax efforts, notably in the South where tax efforts rose in a number of States. As a result, most Southern States had school tax efforts closer to the national average in 1981-82 than they had a decade earlier. States with the highest school tax efforts in 1981-82 were Alaska, Michigan, Montana, New Mexico, Oregon, Utah, and West Virginia.

To present the association of these variables with expenditures, it is useful to partition the States into those with higher- and lower-than-average expenditure growth rates. Nearly half the States (22) exhibited growth rates in per pupil expenditures that were 5 percent or more above the U.S. average growth between 1971-72 and 1981-82. These States were also characterized by per capita incomes that were rising at rates equal to or faster than the national average. Most had school tax efforts in 1981-82 that were higher relative to the national average than a decade earlier. These States also allocated a larger share of State/local expenditures for public schools in 1981-82. In the majority of these States, public school students comprised a smaller share of each State's resident population in 1981-82 than in 1971-72.

At the other extreme, eight States experienced relative

* These data had originally been compiled by the School Finance Project using published National Education Association estimates. For a description of the analysis, see Data Sources in the Appendix.

declines in per pupil expenditures of 5 percentage points or more between 1971-72 and 1981-82. Most of these also exhibited stable or declining incomes compared to the U.S. average, i.e., income growth rates of 6 percent or less. Most of these States also had public school students that comprised a larger share of the resident population in 1981-82. The growth in the ratio of students to population would inevitably depress per pupil expenditures, barring increases in revenues. Utah presents an extreme case of this phenomenon where, despite a substantial increase in tax efforts, the growing proportion of public school students caused per pupil expenditures to lag. On other variables, no clear pattern emerges among States where expenditures grew at below-average rates.

Changes in School Revenues, by Source

During the 1970's, State revenues rose to become the principal source of funds for public schools. In 1971-72, States provided, on the average, 38 percent of public school revenues (entry 1.16). A decade later, this share was equal to 47 percent. Federal revenues had increased from under 8 percent of the total in 1971-72 to 9 percent in 1979-80, but then slipped to 7 percent in 1981-82. The growing dependence on State revenues has pronounced significance for school funding. The principal sources of State revenues are sales and income taxes, the proceeds of which can vary substantially with the business cycle. These variations inevitably influence the amount of State aid provided annually to local school districts. In addition, State education aid is often tied to student counts, so that declining enrollment causes States to reduce school funds to their school districts. On the other hand, local revenues are largely derived from property taxes, which tend to be a more stable source of revenues, much less subject to cyclical variations or enrollment changes. The greater reliance on State revenues can, however, reduce intrastate differences in per pupil expenditures that are often related to the wealth of local school districts.

The largest shift in funding sources occurred in California where State funds replaced most local revenues following the adoption of Proposition 13, a referendum measure which substantially reduced local property tax revenues in that State. In Washington, the local property tax was converted to a State-wide tax that accounts, in part, for the rapid rise in the State share there. In many States, the passage of school finance reform laws during the 1970's was accompanied by increased financial participation by the States. Expenditures did not always rise as a result, and in three States, despite increased State shares of 15 percentage points or more, declines in per pupil expenditures relative to the U.S. average occurred, specifically in Indiana, Nevada, and Arizona.

Change in Federal Education Aid

Federal education aid per pupil rose from about $112 in 1971-72 to $234 a decade later, but in real dollars this aid was virtually unchanged (entry 1.17). Though Federal aid is not distributed on a per pupil basis, the use of per pupil amounts highlights changes that have occurred in the distribution of Federal aid among the States since 1971-72. In that year, Federal education aid per pupil ranged in the States from a low of 27 percent of the U.S. average to a high of 269 percent. Most States received Federal funds that, when expressed in per pupil amounts, were well below average, while only 12 States received Federal funds equal to or greater than 90 percent of the U.S. average. A decade later, the range in Federal aid amounts distributed among the States had been reduced, varying from 63 percent to 184 percent of the U.S. average per pupil amount (235 percent for the District of Columbia). Equally important, Federal aid was more evenly distributed among the States, with 20 States receiving the equivalent to a per pupil amount 10 percent or more below average and 18 States and the District of Columbia receiving aid equal to or above 110 percent of the U.S. average.

A number of States exhibited substantial growths of 50 percentage points or more in Federal aid relative to the U.S. average during this period, including California, Delaware, Illinois, Michigan, North Carolina, Oregon, and Pennsylvania. Compared to the U.S. average, Federal aid per pupil declined in only a handful of States,

most notably in Alaska, Idaho, Kentucky, and New York.

This new aid distribution is due, in part, to changes in the relative importance of the various Federal programs that reach elementary/secondary school students. In 1971-72, this aid was composed largely of programs for the disadvantaged and impact aid, school assistance for federally affected areas. A decade later, aid distributed for handicapped children had grown dramatically, while impact aid had become relatively less important. The relative size in aid for disadvantaged students was unchanged. Differences in how aid is calculated under these various programs account in part for changes in the distribution of Federal aid among the States.

Trends in Total Expenditures, by Purpose

Significant changes in reporting expenditure categories after 1979-80 do not allow for detailed comparisons between data for the early 1980's and the previous decade. Detailed comparisons can be drawn instead between 1970-71 and 1979-80 and will be discussed first. From the beginning to end of the 1970's, total expenditures more than doubled, but in constant dollars this increase was no more than 4 percent (entry 1.18). Current expenditures, which made up 87 percent of the total in 1970-71, represented 91 percent by 1979-80. Yet outlays for instruction, the largest component, slipped during the decade as teacher salaries did not keep pace with inflation. At the same time, a pronounced growth in fixed charges occurred as teachers and other personnel received higher fringe benefits in the form of contributions to retirement funds and medical and life insurance premiums. Outlays for operating and maintaining buildings and buses also grew, largely reflecting higher fuel costs both for heating and transportation. Plant operation and maintenance comprised 10 percent of total outlays, and transportation another 4 percent in 1979-80. Administration costs remained about 4 percent. Capital outlays and interest on school debt became relatively less important as enrollment declines led to diminished school construction and debt for previously built schools was being paid off.

Trends in Salaries for Classroom Teachers

Average annual salaries of classroom teachers in public schools increased from $9,269 in 1970-71 to $19,157 in 1981-82 (entry 1.19). In real terms, teacher salaries were 13 percent lower in 1981-82 as inflation eroded their purchasing power. These salaries in 1981-82 were more than 14 percent lower than in their peak year in 1972-73. Real teacher salaries registered their first decline of the decade in 1973-74 as inflation started to climb. They declined even further in 1974-75 and then remained relatively stable through 1977-78. But in 1978-79, real salaries began a precipitous decline that continued over the next 2 years. The 1981-82 school year was the first time in 5 years that teacher salaries had not been further lowered by inflation. In that year, they showed a modest increase of $30 over 1980-81.

Performance

Change in Mathematics Performance

The National Assessment of Educational Progress (NAEP) provides periodic assessments of student performance in key subject areas. Changes in reading performance were documented in last year's edition of *The Condition of Education*. In 1978 and 1982 NAEP conducted mathematics assessments of 9-, 13-, and 17-year-old students (entry 1.20). Of the three age groups, only the 13-year-olds improved significantly in overall mathematics performance between 1978 and 1982. Significant gains for 13-year-olds were made across all racial/ethnic groups, achievement quartiles, community types, and in both heavily minority and predominantly white schools. Most noteworthy are the groups that showed improvements in performance greater than the 3.8 percent increase attained by 13-year-olds overall; these groups included blacks, Hispanics, low achievers, students in heavily minority schools, and urban community residents. For 9- and 17-year-olds, although the performance in mathematics was in general unchanged between 1978 and 1982, 17-year-olds in heavily minority schools improved significantly in the mathematics assessment.

Assessment items were divided into four successive levels of mathematics learning. From the simplest to the

most complex levels, the test items measured: (1) knowledge of basic facts and definitions; (2) skills enabling one to use specific mathematical procedures; (3) understanding of facts or skills in order to transform knowledge; and (4) ability to apply one's knowledge, skills, and understanding to a problem-solving activity.

Consistent with the overall results in the mathematics assessment, 13-year-olds' performance improved significantly across all four levels between 1978 and 1982 (entry 1.21). Data for 13-year-olds, when broken out by race/ethnicity, achievement level, and community type, showed that most groups performed better in 1982 than in 1978 across the developmental levels. The general trend, however, was that the magnitude of improved performance was greater at the lower learning levels. One explanation of this result is that exercises most easily taught and learned by memorization form the basis for questions examining knowledge, skills, and understanding. By contrast, exercises measuring the ability to apply mathematical concepts to problem-solving activities call upon more complex thinking, not taught by rote drills. In all four levels, performance improvements among 13-year-olds were greater for minorities than whites, for low rather than high achievers, and for urban rather than rural community residents. Nine-year-old students who were black or low achievers and 17-year-old disadvantaged urban students also significantly improved their performances on knowledge exercises.

Change in Science Performance

Science performance was measured by NAEP in 1977 and by the Science Assessment and Research Project (SARP) in 1982. Knowledge measured in the scientific assessment was categorized in three areas—content, inquiry, and science, technology, and society. Science content items tested student understanding of the natural world encompassing biology, physical science, earth science and integrated topics. Nine-year-olds were not tested for science content. Inquiry items dealt with skills required to derive scientific knowledge, that is, the use of appropriate methodology and decision-making procedures. Finally, science, technology, and society items assessed students' understanding of the everyday uses of science.

Across all age groups and science areas, the only statistically significant gains reported were for 9-year-olds in the area of science, technology, and society (entry 1.22). Both males and females showed improvement; white males in particular registered significant gains.

Significant changes also occurred among the 17-year-olds whose performance declined in the content and inquiry assessment areas. Both males and females scored significantly lower in 1982 than in 1977, as did students in the Northeast. Performance on inquiry items also decreased for white and black students; however, only white student declines were statistically significant.

Between 1977 and 1982 13-year-olds showed no significant changes in science performance. Overall, science performance showed minimal changes or mixed results in all age groups. And only among the younger students did scientific knowledge, as it relates to themselves and the world, appear to be increasing.

High School Graduates

The number of high school students graduated each year remained relatively unchanged from 1970-71 to 1981-82, equalling 3.0 million in the later years (entry 1.23). During these years, the ratio of graduates to the 18-year-old population stayed below 72 percent. As the number in this age cohort declines, the number of graduates is projected to decline significantly from 1981-82 to 1992-93. With no noticeable change expected in the high school graduation rate, the number of high school graduates is projected to decrease to 2.4 million in 1992-93, a drop of 21 percent from 1981-82.

Trends in the number of high school graduates are expected to be similar in public and private schools. The number of public high school graduates increased from 2.6 million in 1970-71 to 2.7 million in 1981-82, an increase of 3 percent. This number is projected to drop to 2.1 million by 1992-93, a decline of 21 percent. The number of private high school graduates fell from 300,000 in 1970-71 to 290,000 in 1981-82, a decrease of 3 percent. This number is projected to decrease still further to 236,000 by 1992-93, a decrease of 19 percent.

Table 1.1

Trends in Elementary/Secondary School Enrollment, by Control of School and Grade Level: Fall 1970 to Fall 1992

(In Thousands)

Fall of Year	Total Enrollment			Public School Enrollment			Private School Enrollment		
	Preprimary to 12th Grade	Preprimary to 8th Grade	9th to 12th Grade	Preprimary to 12th Grade	Preprimary to 8th Grade	9th to 12th Grade	Preprimary to 12th Grade	Preprimary to 8th Grade	9th to 12th Grade
1970	51,272	36,629	14,643	45,909	32,577	13,332	5,363	4,052	1,311
1971	51,281	36,165	15,116	46,081	32,265	13,816	[1]5,200	3,900	1,300
1972	50,744	35,531	15,213	45,744	31,831	13,913	[1]5,000	3,700	1,300
1973	50,430	35,053	15,377	45,429	31,353	14,077	[1]5,000	3,700	1,300
1974	50,053	34,621	15,432	45,053	30,921	14,132	[1]5,000	3,700	1,300
1975	49,791	34,187	15,604	44,791	30,487	14,304	[1]5,000	3,700	1,300
1976	49,484	33,331	15,653	44,317	30,006	14,311	[1]5,167	3,825	1,342
1977	48,716	33,133	15,583	43,577	29,336	14,240	5,140	3,797	1,343
1978	47,636	32,060	15,576	42,550	28,328	14,223	5,085	3,732	1,355
1979	46,645	31,631	15,014	41,645	27,931	13,714	[1]5,000	3,700	1,300
1980	45,949	31,297	14,652	40,987	27,674	13,313	4,962	3,623	1,339
1981	45,200	30,945	14,255	40,099	27,245	12,855	[1]5,100	3,700	1,400
1982	44,743	30,843	13,901	39,643	27,143	12,501	[1]5,100	3,700	1,400
				Projected[2]					
1983	44,231	30,610	13,621	39,131	26,910	12,221	5,100	3,700	1,400
1984	43,925	30,246	13,679	38,925	26,646	12,279	5,000	3,600	1,400
1985	43,977	30,236	13,741	38,977	26,625	12,341	5,000	3,600	1,400
1986	44,175	30,587	13,588	39,075	26,887	12,188	5,100	3,700	1,400
1987	44,173	30,993	13,180	39,173	27,293	11,880	5,000	3,700	1,300
1988	44,344	31,583	12,761	39,244	27,783	11,461	5,100	3,800	1,300
1989	44,644	32,209	12,435	39,444	28,309	11,135	5,200	3,900	1,300
1990	45,069	32,925	12,144	39,869	28,925	10,944	5,200	4,000	1,200
1991	45,641	33,457	12,184	40,441	29,457	10,984	5,200	4,000	1,200
1992	46,378	34,125	12,253	41,078	30,025	11,053	5,300	4,100	1,200

[1]Estimated.

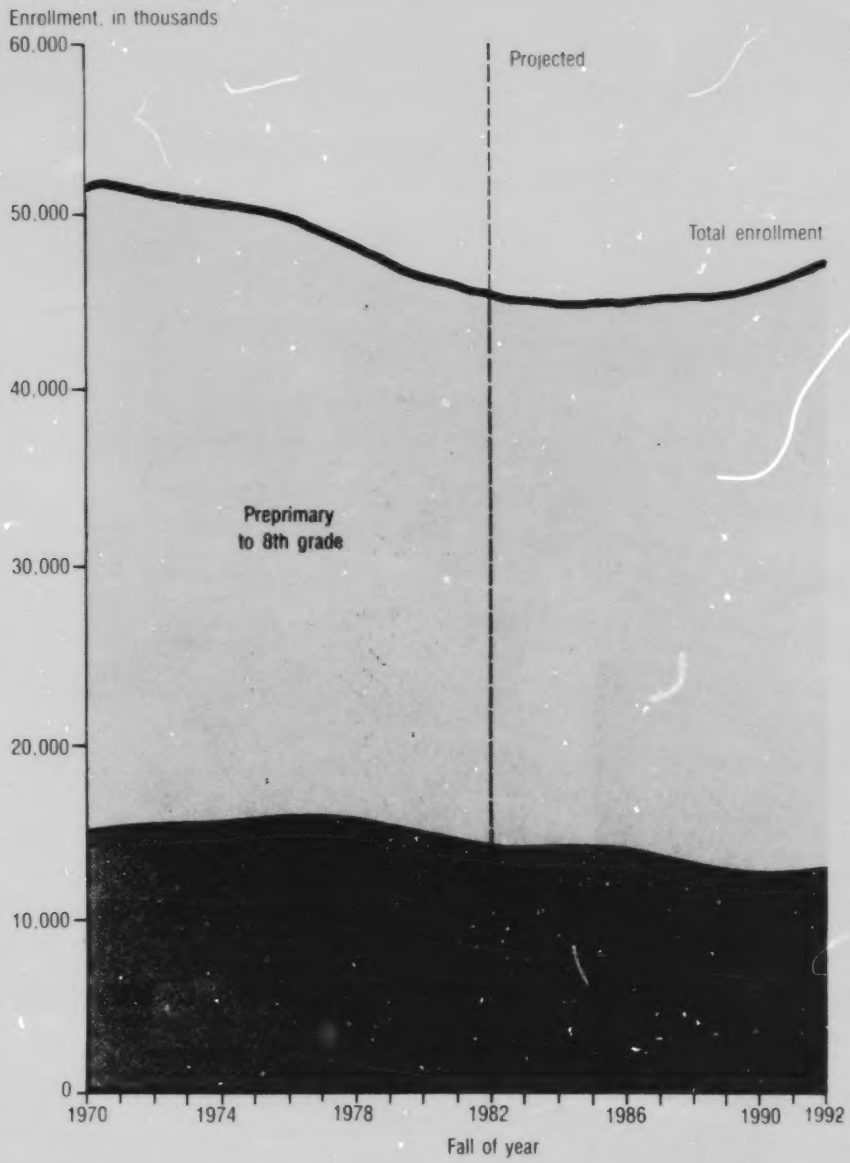
[2]For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools*, various years; *Statistics of Nonpublic Elementary and Secondary Schools*, various years; and *Projections of Education Statistics to 1992-93*, forthcoming.

Chart 1.1

Enrollment in Regular Elementary/Secondary Day Schools, by Grade Level



Enrollment in the lower grades is projected to increase beginning in 1986, while in the upper grades it is expected to continue declining throughout the 1980's and into 1990.

Table 1.2

Public Elementary/Secondary School Enrollment, by Grade Level and State: Fall 1970 and Fall 1982

(Numbers in Thousands)

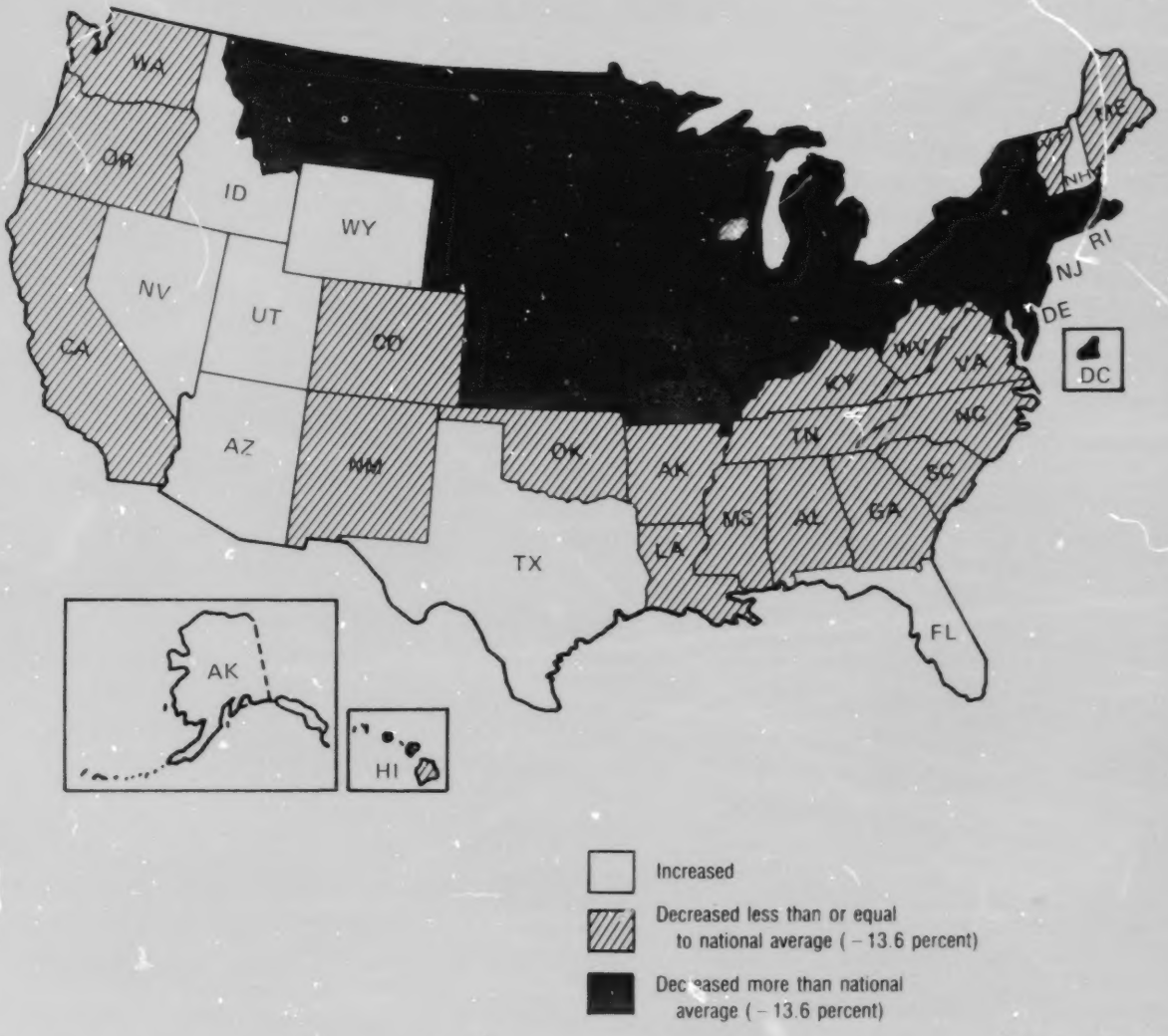
State	Total Enrollment			Preprimary to 8th Grade Enrollment			9th to 12th Grade Enrollment		
	Fall 1970	Fall 1982	Percent Change	Fall 1970	Fall 1982	Percent Change	Fall 1970	Fall 1982	Percent Change
United States	45,909	39,643	-13.6	32,577	27,143	-16.7	13,332	12,501	-6.2
Alabama	805	724	-10.1	570	510	-10.5	235	214	-8.9
Alaska	80	89	11.3	61	63	3.3	19	26	36.8
Arizona	440	510	15.9	314	359	14.3	126	151	19.8
Arkansas	463	433	-6.5	330	304	-7.9	133	128	-3.8
California	4,633	4,065	-12.3	3,231	2,802	-13.3	1,402	1,264	-9.8
Colorado	550	545	-0.9	391	380	-2.8	159	166	4.4
Connecticut	662	486	-26.6	487	336	-31.0	175	150	-14.3
Delaware	133	93	-30.1	94	60	-36.2	39	33	-15.4
District of Columbia	146	91	-37.7	113	65	-42.5	33	26	-21.2
Florida	1,428	1,485	4.0	1,016	1,039	2.3	412	446	8.3
Georgia	1,099	1,054	-4.1	800	739	-7.6	299	315	5.4
Hawaii	181	162	-10.5	129	110	-14.7	52	52	0
Idaho	182	203	11.5	124	145	16.9	58	58	0
Illinois	2,357	1,880	-20.2	1,688	1,287	-23.8	669	593	-11.4
Indiana	1,231	1,000	-18.8	876	664	-24.2	355	336	-5.4
Iowa	660	505	-23.5	465	338	-27.3	195	167	-14.4
Kansas	512	407	-20.5	357	283	-20.7	155	124	-20.0
Kentucky	717	651	-9.2	513	458	-10.7	204	194	-4.9
Louisiana	842	776	-7.8	615	556	-9.6	227	220	-3.1
Maine	245	212	-13.5	177	147	-16.9	68	65	-4.4
Maryland	916	699	-23.7	664	462	-30.4	252	237	-6.0
Massachusetts	1,168	909	-22.2	833	597	-28.3	335	312	-6.9
Michigan	2,181	1,761	-19.3	1,605	1,157	-27.9	576	605	5.0
Minnesota	921	715	-22.4	631	472	-25.2	290	244	-15.9
Mississippi	534	468	-12.4	388	327	-15.7	146	141	-3.4
Missouri	1,039	803	-22.7	748	547	-26.9	291	256	-12.0
Montana	177	152	-14.1	121	107	-11.6	56	45	-19.6
Nebraska	329	269	-18.2	230	186	-19.1	99	83	-16.2
Nevada	128	151	18.0	93	97	4.3	35	54	54.3
New Hampshire	159	160	0.6	114	107	-6.1	45	53	17.8
New Jersey	1,482	1,173	-20.9	1,063	777	-26.9	419	396	-5.5
New Mexico	281	269	-4.3	199	190	-4.5	82	79	-3.7
New York	3,477	2,719	-21.8	2,448	1,761	-28.1	1,029	957	-7.0
North Carolina	1,192	1,097	-8.0	836	769	-8.0	356	328	-7.9
North Dakota	147	117	-20.4	100	81	-19.0	47	36	-23.4
Ohio	2,426	1,860	-23.3	1,698	1,259	-25.9	728	602	-17.3
Oklahoma	627	594	-5.3	437	423	-3.2	190	171	-10.0
Oregon	480	448	-6.7	325	309	-4.9	155	139	-10.3
Pennsylvania	2,364	1,784	-24.5	1,635	1,157	-29.2	728	627	-13.9
Rhode Island	188	139	-26.1	135	89	-34.1	53	50	-5.7
South Carolina	638	609	-4.5	459	424	-7.6	179	184	2.8
South Dakota	166	124	-25.3	114	86	-24.6	52	38	-26.9
Tennessee	900	828	-8.0	649	591	-8.9	251	237	-5.6
Texas	2,840	2,986	5.1	2,046	2,150	5.1	794	836	5.3
Utah	304	370	21.7	213	275	29.1	91	95	4.4
Vermont	103	91	-11.7	74	64	-13.5	29	27	-6.9
Virginia	1,079	976	-9.5	776	683	-12.0	303	293	-3.3
Washington	818	739	-9.7	573	508	-11.3	245	232	-5.3
West Virginia	400	375	-6.3	281	267	-5.0	119	108	-9.2
Wisconsin	994	785	-21.0	679	504	-25.8	315	281	-10.8
Wyoming	87	107	23.0	60	74	23.3	27	27	0

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Schools, Fall 1970*, 1971, and unpublished revisions; and Common Core of Data, Part IV—Enrollment, Fall 1982, unpublished tabulations (November 1983).

Chart 1.2

Percent Change in Public Elementary/Secondary School Enrollment Between 1970 and 1982, by State



Between 1970 and 1982, public school enrollment declined by 14 percent nationally. Most Northeast and North Central States experienced declines greater than the national average, while nine States located mainly in the South and West recorded enrollment increases.

Table 1.3

Racial/Ethnic Distribution of Public Elementary/Secondary School Enrollment, by State: Fall 1980 and Change From Fall 1970

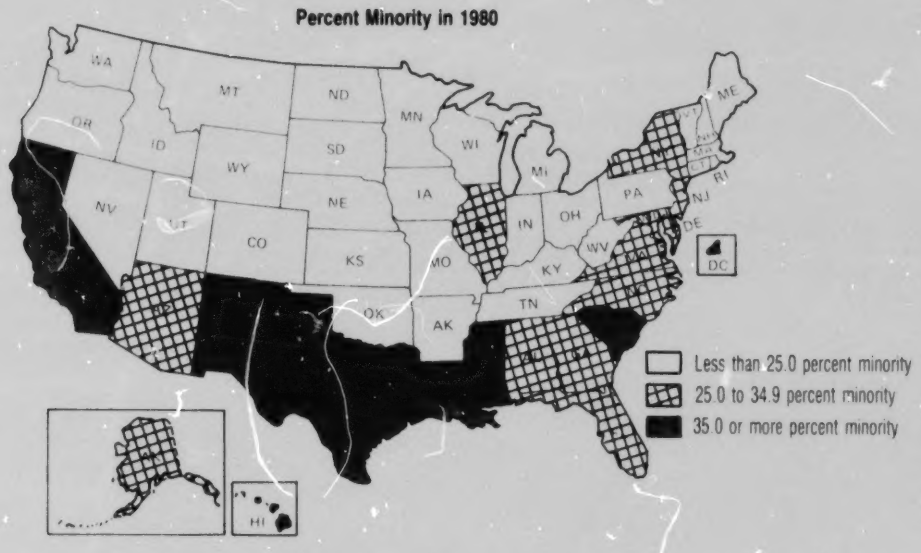
State	Percentage Distribution in 1980							Percent Minority in 1970	Change from 1970 to 1980, in Percentage Points
	Total	White Non-Hispanic	Total Minority	Black Non-Hispanic	Hispanic	American Indian/ Alaskan Native	Asian or Pacific Islander		
United States	100.0	73.3	**26.7**	16.1	8.0	0.8	1.9	20.7	**6.0**
Alabama	100.0	66.4	**33.6**	33.1	.1	.2	.2	34.3	**–.7**
Alaska	100.0	71.6	**28.4**	3.9	1.6	20.6	2.3	17.5	**10.9**
Arizona	100.0	66.3	**33.7**	4.2	24.2	4.1	1.1	28.8	**4.9**
Arkansas	100.0	76.5	**23.5**	22.5	.3	.4	.3	25.1	**–1.6**
California	100.0	57.1	**42.9**	10.1	25.3	.8	6.6	27.3	**15.6**
Colorado	100.0	77.9	**22.1**	4.6	15.3	.5	1.7	18.8	**3.3**
Connecticut	100.0	83.0	**17.0**	10.2	5.8	.1	.9	12.2	**4.8**
Delaware	100.0	71.2	**28.8**	25.9	1.8	.1	.9	21.4	**7.4**
District of Columbia	100.0	3.6	**96.4**	93.4	2.0	0	1.0	(*)	(*)
Florida	100.0	67.8	**32.2**	23.4	7.9	.1	.8	27.9	**4.3**
Georgia	100.0	65.7	**34.3**	33.5	.3	0	.5	33.5	**.8**
Hawaii	100.0	24.8	**75.2**	1.4	2.0	.2	71.4	(*)	(*)
Idaho	100.0	91.8	**8.2**	.5	4.6	2.1	1.0	4.3	**3.9**
Illinois	100.0	71.4	**28.6**	20.9	6.1	.1	1.5	22.0	**6.6**
Indiana	100.0	88.0	**12.0**	9.9	1.5	.1	.5	10.3	**1.7**
Iowa	100.0	95.9	**4.1**	2.2	.8	.2	.9	2.2	**1.9**
Kansas	100.0	87.3	**12.7**	7.8	3.0	.6	1.2	8.8	**3.9**
Kentucky	100.0	90.9	**9.1**	8.7	.1	0	.3	9.3	**–.2**
Louisiana	100.0	56.6	**43.4**	41.5	.8	.4	.8	41.0	**2.4**
Maine	100.0	99.1	**.9**	.3	.1	.2	.3	.8	**.1**
Maryland	100.0	66.5	**33.5**	30.6	.9	.2	1.8	24.9	**8.6**
Massachusetts	100.0	89.3	**10.7**	6.2	3.3	.1	1.1	6.0	**4.7**
Michigan	100.0	78.7	**21.3**	17.9	1.8	.8	.8	15.1	**6.2**
Minnesota	100.0	94.1	**5.9**	2.1	.7	1.6	1.5	2.6	**3.3**
Mississippi	100.0	48.4	**51.6**	51.0	.1	.1	.4	51.0	**.6**
Missouri	100.0	85.2	**14.8**	13.6	.5	.1	.5	15.1	**–.3**
Montana	100.0	87.9	**15.3**	.3	1.1	13.0	.8	7.3	**8.0**
Nebraska	100.0	89.5	**10.5**	5.6	1.9	2.2	.8	7.1	**3.4**
Nevada	100.0	81.1	**18.9**	9.5	5.2	2.0	2.2	14.3	**4.6**
New Hampshire	100.0	98.7	**1.3**	.5	.4	0	.4	.8	**.5**
New Jersey	100.0	71.6	**28.4**	18.5	8.0	.1	1.7	20.0	**8.4**
New Mexico	100.0	43.0	**57.0**	2.2	46.5	7.8	.6	48.1	**8.9**
New York	100.0	68.0	**32.0**	17.9	12.0	.2	2.0	25.3	**6.7**
North Carolina	100.0	68.1	**31.9**	29.6	.2	1.6	.4	30.7	**1.2**
North Dakota	100.0	96.5	**3.5**	.5	.5	1.8	.7	2.0	**1.5**
Ohio	100.0	85.3	**14.7**	13.1	1.0	.1	.6	13.0	**1.7**
Oklahoma	100.0	79.2	**20.8**	9.3	1.6	9.1	.8	16.0	**4.8**
Oregon	100.0	91.5	**8.5**	2.1	2.6	1.7	2.2	4.5	**4.0**
Pennsylvania	100.0	85.1	**14.9**	12.4	1.5	.2	.7	12.6	**2.3**
Rhode Island	100.0	91.8	**8.2**	4.7	2.1	.3	1.1	4.9	**3.3**
South Carolina	100.0	56.5	**43.5**	42.8	.2	.1	.4	41.2	**2.3**
South Dakota	100.0	92.1	**7.9**	.2	.2	7.2	.3	5.7	**2.2**
Tennessee	100.0	75.5	**24.5**	24.0	.1	0	.4	21.2	**3.3**
Texas	100.0	54.1	**45.9**	14.4	30.4	.2	1.1	37.1	**8.8**
Utah	100.0	92.7	**7.3**	.5	3.5	1.8	1.5	6.2	**1.1**
Vermont	100.0	99.0	**1.0**	.3	.1	.1	.5	.4	**.6**
Virginia	100.0	72.5	**27.5**	25.5	.5	.1	1.4	24.7	**2.8**
Washington	100.0	85.9	**14.1**	3.4	4.0	3.0	3.7	7.0	**7.1**
West Virginia	100.0	95.7	**4.3**	3.9	.1	0	.3	4.9	**–.6**
Wisconsin	100.0	90.7	**9.3**	6.2	1.5	.9	.7	6.0	**3.3**
Wyoming	100.0	92.5	**7.5**	.7	5.3	1.0	.4	8.9	**–1.4**

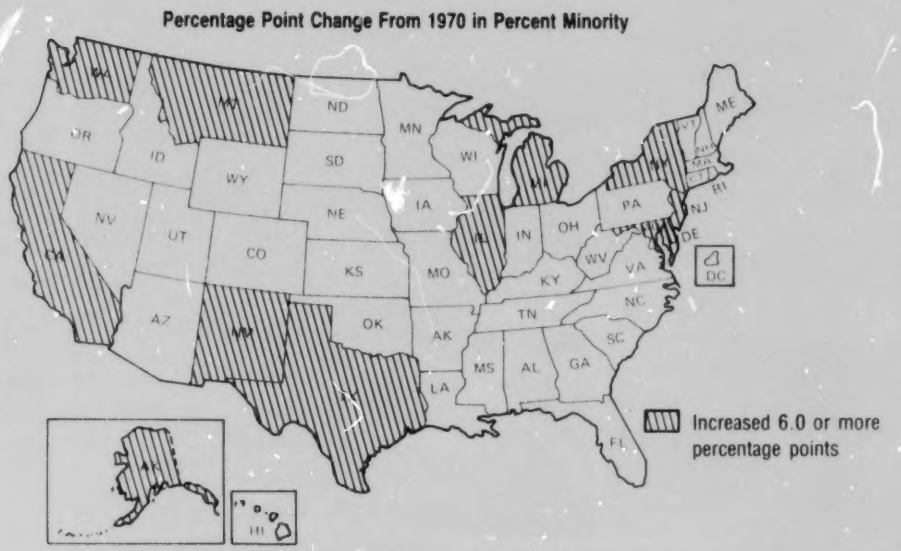
*Not available.

SOURCE: U.S. Department of Education, Office for Civil Rights, 1980 Elementary and Secondary Civil Rights Survey, *National Summaries*, 1982, and *State Summaries*, 1982, projected data; and unpublished tabulations (December 1983).

Chart 1.3

Minority Enrollment as Percent of Public Elementary/Secondary School Enrollment, by State





In 1980, minority students represented at least 35 percent of the public school enrollments in many South Atlantic, Gulf Coast, and Southwestern States. In 12 States, minority representation rose by at least 6 percentage points between 1970 and 1980.

Table 1.4

Number and Distribution of Population 5 to 17 Years Old Who Speak Non-English Language at Home, by State: April 1980

State	Total Population 5 to 17 Years Old, in Thousands	Those Who Speak Non-English Language at Home, in Thousands	Percent of Total Population	Percentage Distribution of Those Who Speak Non-English Language at Home
United States	47,494	4,586	9.7	100.0
Alabama	868	15	1.7	.3
Alaska	92	10	10.7	.2
Arizona	579	130	22.5	2.8
Arkansas	496	8	1.6	.2
California	4,685	1,076	23.0	23.5
Colorado	594	48	8.0	1.0
Connecticut	639	71	11.0	1.5
Delaware	125	6	4.5	.1
District of Columbia	109	6	5.4	.1
Florida	1,795	206	11.5	4.5
Georgia	1,236	28	2.3	.6
Hawaii	198	30	14.9	.6
Idaho	214	10	4.7	.2
Illinois	2,407	235	9.8	5.1
Indiana	1,201	43	3.6	.9
Iowa	606	16	2.7	.4
Kansas	469	17	3.7	.4
Kentucky	802	13	1.6	.3
Louisiana	972	50	5.1	1.1
Maine	244	13	5.3	.3
Maryland	896	46	5.1	1.0
Massachusetts	1,155	107	9.2	2.3
Michigan	2,068	81	3.9	1.8
Minnesota	867	25	2.9	.5
Mississippi	602	11	1.8	.2
Missouri	1,011	25	2.5	.5
Montana	167	5	3.3	.1
Nebraska	325	9	2.8	.2
Nevada	160	12	7.5	.3
New Hampshire	196	9	4.7	.2
New Jersey	1,531	205	13.4	4.5
New Mexico	303	111	36.6	2.4
New York	3,560	614	17.2	13.4
North Carolina	1,256	26	2.1	.6
North Dakota	137	4	2.8	.1
Ohio	2,308	87	3.8	1.9
Oklahoma	623	21	3.4	.5
Oregon	526	24	4.5	.5
Pennsylvania	2,380	112	4.7	2.5
Rhode Island	187	19	10.0	.4
South Carolina	706	16	2.3	.3
South Dakota	148	7	4.8	.2
Tennessee	975	17	1.8	.4
Texas	3,143	804	25.6	17.5
Utah	350	19	5.5	.4
Vermont	110	4	3.4	.1
Virginia	1,114	43	3.9	.9
Washington	834	47	5.6	1.0
West Virginia	414	7	1.7	.2
Wisconsin	1,013	34	3.3	.7
Wyoming	101	4	4.2	.1

SOURCE: U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Census Summary Tape File 3C, unpublished tabulations (January 1984)

Chart 1.4

Percent of 5- to 17-Years-Olds That Speak a Language Other Than English at Home

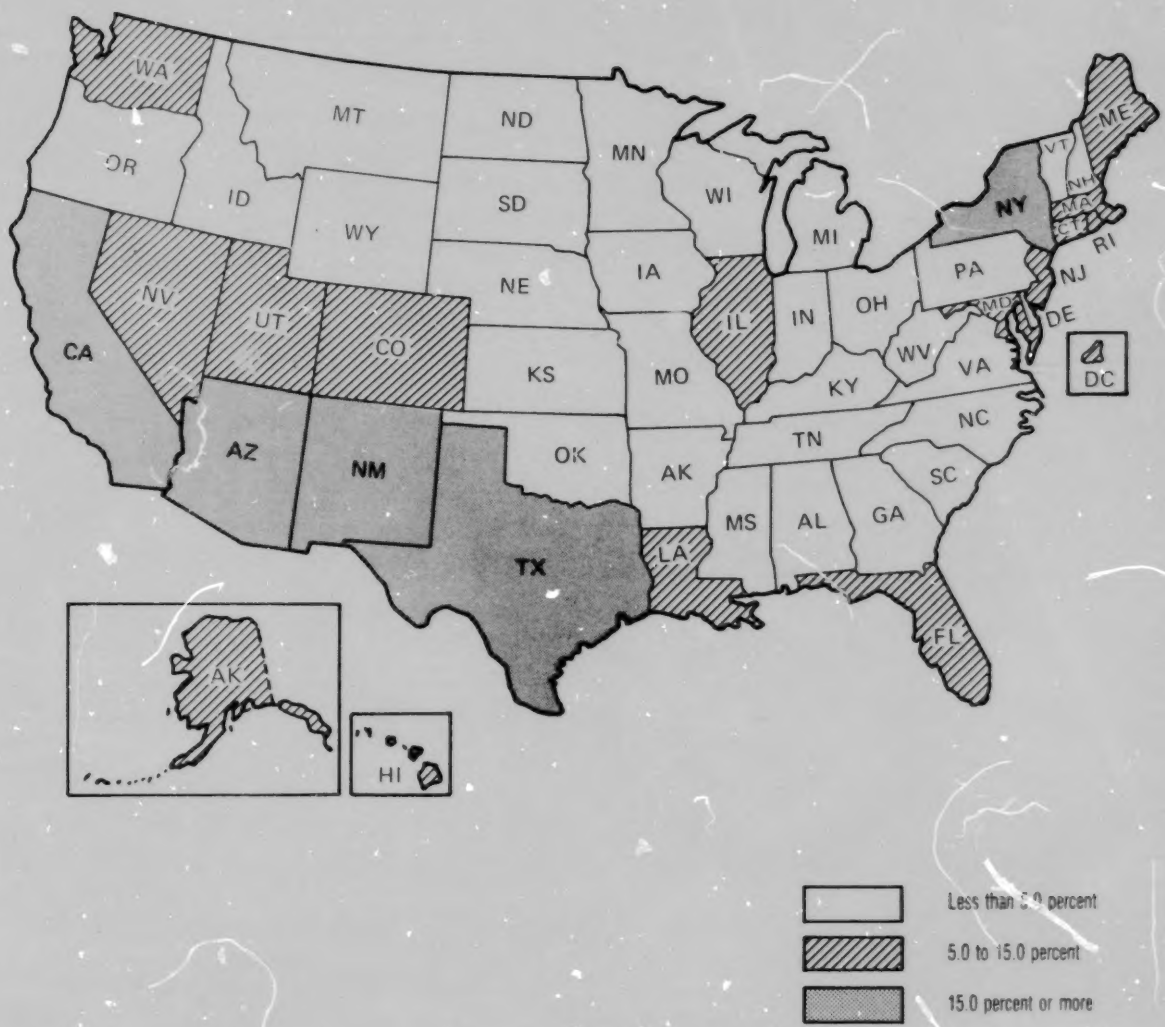


Table 1.5

Estimated Language-Minority[1] Status and English Language Proficiency[2] of Population 5 to 14 Years Old: Selected Years, 1976 to 1982

Characteristic	Numbers (Estimated), in Thousands			Percent Change	
	Spring 1976	Spring 1978	Fall 1982	1976 to 1982	1978 to 1982
Total population 5 to 14 years old	37,644	[3]36,220	[3]33,980	−9.7	−6.2
Language minority[1]	3,538	3,812	4,505	+27.3	+18.2
Language minority as percent of total population	**9.4**	**10.5**	**13.3**	+41.0	+26.7
Limited-English proficient (LEP)[2]	---	2,409	2,657	---	+10.3
LEP as percent of all language minority		**63.2**	**59.0**	---	−6.6
All other 5- to 14-year-olds	34,106	[3]32,408	[3]29,676	−13.0	−8.4
Limited-English proficient (LEP)[2]	---	---	12,468	---	---
LEP as percent of all other 5- to 14-year-olds	---	---	**42.3**	---	---

[1]Language minority children are defined as members of households where the usual or second, often-spoken household language is other than English.

[2]Limited-English proficient estimates include all children scoring below specified cutoffs on special tests of English proficiency (originally developed for the 1978 Children's English and Services Study), plus children judged to be unable to complete the test or not tested due to refusal.

[3]Numbers are based on Current Population Estimates.

SOURCE: Unpublished tabulations (January 1983) prepared by U.S. Department of Education, Office of Planning, Budget and Evaluation from data collected by U.S. Department of Commerce, Bureau of the Census, 1976 Survey of Income and Education; 1982 English Language Proficiency Survey, preliminary estimates; and U.S. Department of Education, National Institute of Education, 1978 Children's English and Services Study.

Chart 1.5

Estimated Language Minority Status and English Language Proficiency of Population 5 to 14 Years Old

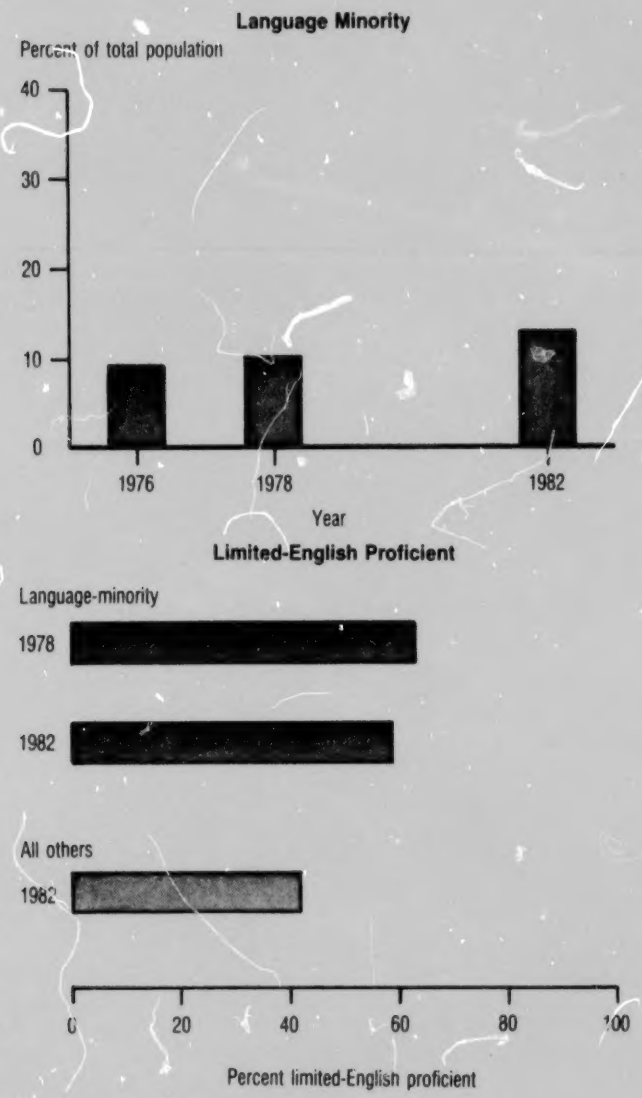


Table 1.6

Persons 3 to 21 Years Old Served Annually in Educational Programs for the Handicapped, Percentage Distribution, and Percent of Total Public School Enrollment, by Type of Handicap: 1976-77 to 1982-83

Type of Handicap	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
			Number Served, in Thousands				
All conditions	**3,692**	**3,751**	**3,889**	**4,005**	**4,142**	**4,198**	**4,255**
Learning disabled	**796**	**964**	**1,130**	**1,276**	**1,462**	**1,622**	**1,741**
Speech impaired	1,302	1,223	1,214	1,186	1,168	1,135	1,131
Mentally retarded	959	933	901	869	829	786	757
Emotionally disturbed	283	288	300	329	346	339	352
Hard of hearing and deaf	87	85	85	80	79	75	73
Orthopedically handicapped	87	87	70	66	58	58	57
Other health impaired	141	135	105	106	98	79	50
Visually handicapped	38	35	32	31	31	29	28
Multihandicapped	*	*	50	60	68	71	63
Deaf-blind	*	*	2	2	3	2	2
			Percentage Distribution of Persons Served				
All conditions	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Learning disabled	21.5	25.7	29.1	31.9	35.3	38.6	40.9
Speech impaired	35.3	32.6	31.2	29.6	28.2	27.0	26.6
Mentally retarded	26.0	24.9	23.2	21.7	20.0	18.7	17.8
Emotionally disturbed	7.6	7.7	7.7	8.2	8.4	8.1	8.3
Hard of hearing and deaf	2.4	2.3	2.2	2.0	1.9	1.8	1.7
Orthopedically handicapped	2.3	2.3	1.8	1.6	1.4	1.4	1.3
Other health impaired	3.8	3.6	2.7	2.6	2.4	1.9	1.2
Visually handicapped	1.0	.9	.8	.8	.8	.7	.7
Multihandicapped	—	—	1.3	1.5	1.6	1.7	1.5
Deaf-blind	—	—	.1	.1	.1	.1	.1
			As Percent of Total Enrollment				
All conditions	8.33	8.61	9.14	9.62	10.11	10.47	10.73
Learning disabled	1.80	2.21	2.66	3.06	3.57	4.05	4.39
Speech impaired	2.94	2.81	2.85	2.85	2.85	2.83	2.85
Mentally retarded	2.16	2.14	2.12	2.09	2.02	1.96	1.91
Emotionally disturbed	.64	.66	.71	.79	.85	.85	.89
Hard of hearing and deaf	.20	.20	.20	.19	.19	.19	.18
Orthopedically handicapped	.20	.20	.16	.16	.14	.14	.14
Other health impaired	.32	.31	.25	.25	.24	.20	.13
Visually handicapped	.09	.08	.08	.08	.08	.07	.07
Multihandicapped	—	—	.12	.14	.17	.18	.16
Deaf-blind	—	—	.01	.01	.01	.01	.01

*Not available.

—Not applicable.

NOTE: Child counts are based on reports from the 50 States and District of Columbia only (i.e., figures from U.S. territories are not included). Percentages of total enrollment are based on the total annual enrollment of U.S. public schools, preprimary through 12th grade. Details may not all to totals because of rounding.

SOURCE: Calculated from U.S. Department of Education, Office of Special Education and Rehabilitative Services, *Fifth Annual Report to Congress on the Implementation of Public Law 94-142,* Appendix 2, Table F (1983), and unpublished tabulations.

Persons 3 to 21 Years Old Served in Special Education Programs for the Handicapped

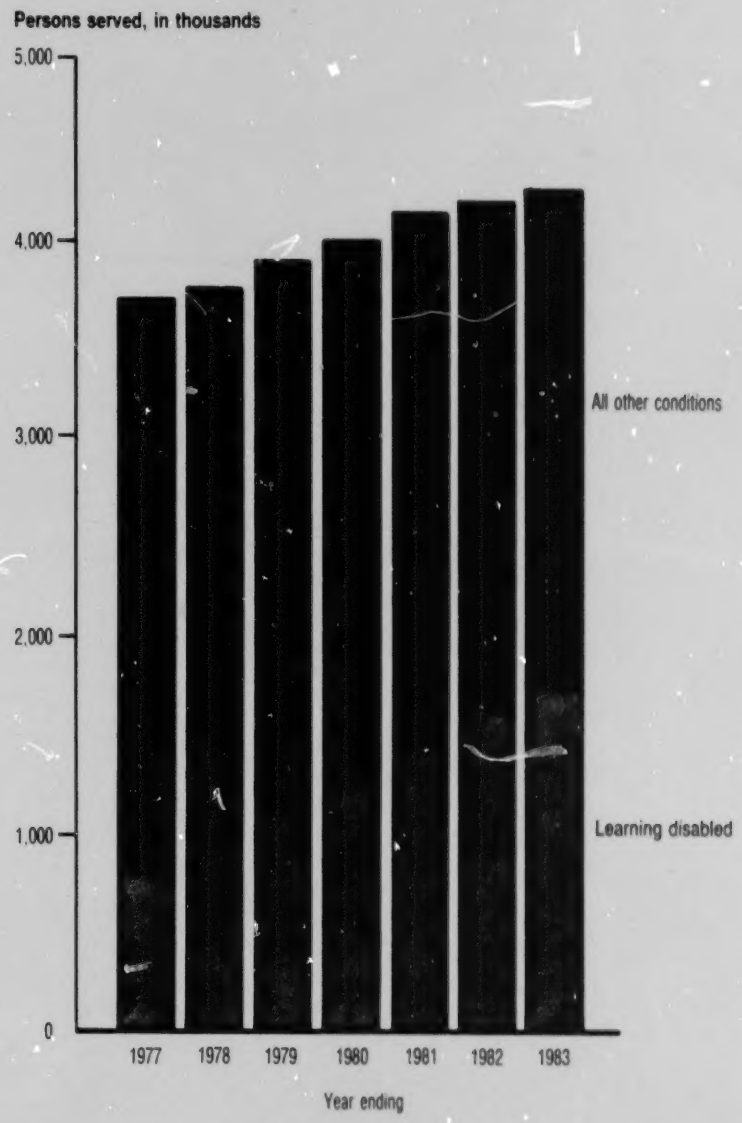


Table 1.7

Trends in Preprimary Enrollment,[1] by Age of Student and Control of School: Fall 1970 to Fall 1992

(In Thousands)

Fall of Year	Total	Public School Enrollment					Private School Enrollment				
		Total	3 Years Old	4 Years Old	5 Years Old	6 Years Old	Total	3 Years Old	4 Years Old	5 Years Old	6 Years Old
1970	**4,279**	**2,981**	123	494	2,214	150	**1,298**	332	512	429	25
1971	**4,330**	**3,007**	107	486	2,254	160	**1,323**	323	562	417	21
1972	**4,417**	**3,036**	150	532	2,188	166	**1,381**	385	588	387	21
1973	**4,399**	**2,982**	137	518	2,175	152	**1,417**	378	659	368	12
1974	**4,858**	**3,149**	178	543	2,280	148	**1,709**	506	778	413	12
1975	**5,141**	**3,425**	191	645	2,417	172	**1,716**	492	773	437	14
1976	**4,996**	**3,418**	180	608	2,451	179	**1,578**	422	740	389	27
1977	**4,806**	**3,225**	198	591	2,242	194	**1,581**	447	699	400	35
1978	**4,813**	**3,161**	233	601	2,132	195	**1,652**	526	712	379	35
1979	**4,895**	**3,230**	232	606	2,177	215	**1,665**	514	787	348	16
1980	**5,162**	**3,322**	237	602	2,227	256	**1,840**	620	821	370	29
1981	**5,218**	**3,279**	268	588	2,176	247	**1,939**	623	853	427	36
1982	**5,451**	**3,476**	340	602	2,247	287	**1,975**	588	894	434	59
						Projected[2]					
1983	**5,472**	**3,485**	339	642	2,248	265	**1,987**	625	903	414	45
1984	**5,748**	**3,650**	345	697	2,344	264	**2,098**	640	980	433	45
1985	**6,018**	**3,844**	362	718	2,489	275	**2,174**	660	1,010	459	45
1986	**6,171**	**3,925**	378	743	2,512	292	**2,246**	690	1,046	463	47
1987	**6,327**	**4,007**	395	768	2,549	295	**2,320**	722	1,080	470	48
1988	**6,476**	**4,084**	412	794	2,579	299	**2,392**	752	1,116	476	48
1989	**6,625**	**4,162**	428	819	2,612	303	**2,463**	781	1,151	482	49
1990	**6,767**	**4,236**	444	842	2,643	307	**2,531**	809	1,184	488	50
1991	**6,888**	**4,297**	457	864	2,665	311	**2,591**	836	1,213	492	50
1992	**6,991**	**4,349**	470	882	2,683	314	**2,642**	858	1,240	494	50

[1]Includes prekindergarten and kindergarten enrollments in regular public schools and enrollments in independently operated public and private nursery schools and kindergartens.

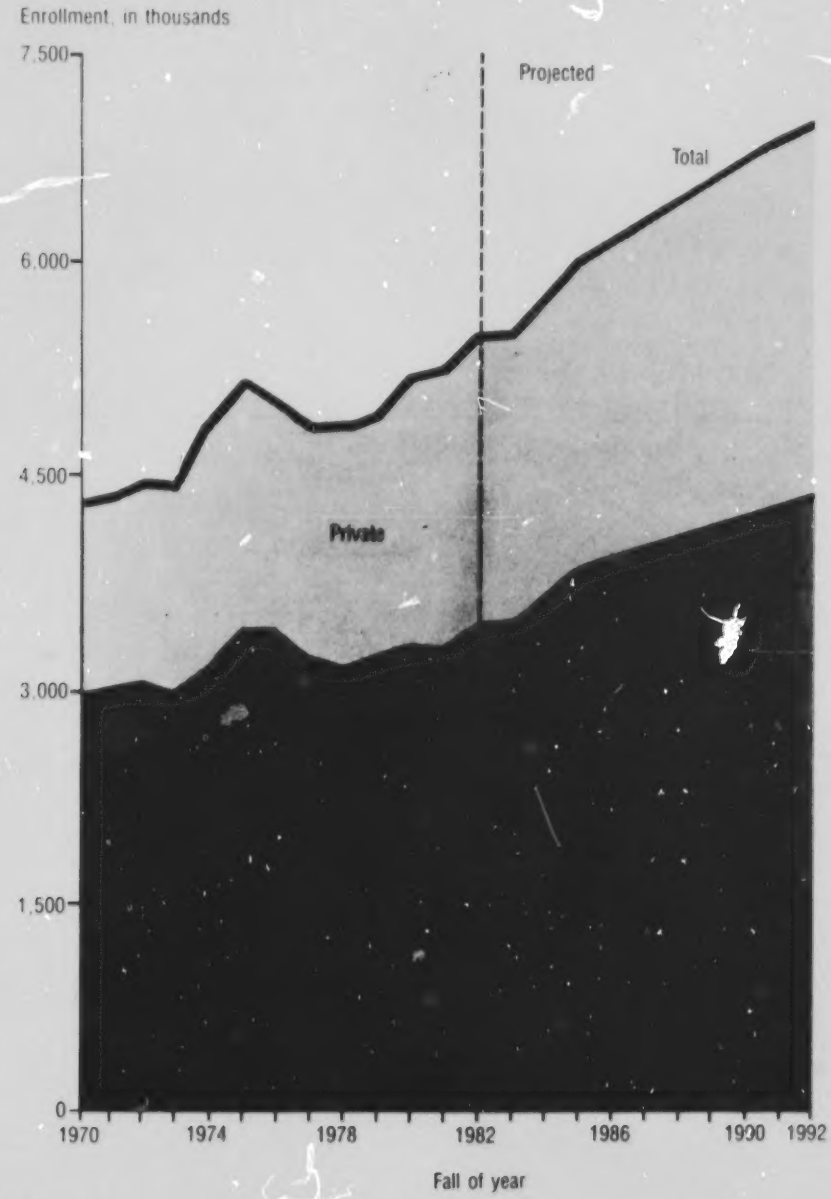
[2]For methodological details, see *Projections of Education Statistics in 1992-93*, forthcoming.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, Nursery School and Kindergarten Enrollment*, Series P-20, and U.S. Department of Education, National Center for Education Statistics, *Preprimary Enrollment*, various years, and *Projections of Education Statistics to 1992-93*, forthcoming.

Chart 1.7

Preprimary Enrollment, by Control of School



Preprimary enrollment is projected to increase throughout the 1980's and into the 1990's in both public and private nursery schools and kindergartens.

Table 1.8

Public Preprimary Enrollment Compared to 1st Grade Enrollment, by State: Fall 1970 and Fall 1982

State	Enrollment in Fall 1970			Enrollment in Fall 1982		
	Preprimary[1]	1st Grade	Preprimary as Percent of 1st Grade	Preprimary[1]	1st Grade	Preprimary as Percent of 1st Grade
United States	[2]2,557,394	3,810,178	67.1	2,839,398	2,936,422	96.7
Alabama	1,698	78,843	2.2	36,736	58,351	63.0
Alaska	5,457	7,235	75.4	7,407	7,325	101.1
Arizona	13,017	38,218	34.1	37,869	38,757	97.7
Arkansas	(*)	42,853	(*)	30,235	34,293	88.2
California	335,975	363,610	92.4	313,584	308,359	101.7
Colorado	38,174	41,297	92.4	41,400	40,801	101.5
Connecticut	57,625	55,410	104.0	37,072	34,070	108.8
Delaware	7,730	11,368	68.0	6,169	6,361	97.0
District of Columbia	12,508	13,632	91.8	9,145	7,445	122.8
Florida	47,211	119,635	39.5	99,595	107,420	92.7
Georgia	13,612	103,696	13.1	69,332	82,690	83.8
Hawaii	13,810	14,346	96.3	12,790	12,311	103.9
Idaho	(*)	15,066	(*)	16,115	17,581	91.7
Illinois	184,914	186,776	99.0	154,547	137,108	112.7
Indiana	81,246	102,985	78.9	70,423	73,966	95.2
Iowa	50,747	49,890	101.7	39,853	35,881	111.1
Kansas	36,681	36,145	101.5	32,629	30,782	106.0
Kentucky	4,246	69,829	6.1	44,857	52,376	85.6
Louisiana	25,542	77,796	32.8	59,569	68,785	86.6
Maine	18,318	20,193	90.7	15,293	15,051	101.6
Maryland	64,133	67,151	95.5	51,835	45,892	112.9
Massachusetts	65,752	98,731	66.6	59,512	60,075	99.1
Michigan	198,445	183,178	108.3	125,153	113,917	109.9
Minnesota	64,894	67,418	96.3	56,035	48,728	115.0
Mississippi	349	51,170	0.7	5,833	42,216	13.8
Missouri	74,061	89,572	82.7	59,394	57,839	102.7
Montana	3,333	13,812	24.1	11,467	12,340	92.9
Nebraska	24,000	24,270	98.9	22,810	20,077	113.6
Nevada	9,410	11,107	84.7	10,552	11,178	94.4
New Hampshire	5,216	14,936	34.9	4,192	12,997	32.3
New Jersey	125,521	118,302	106.1	80,340	76,482	105.0
New Mexico	3,196	25,226	12.7	19,955	21,072	94.7
New York	267,000	279,626	95.5	179,531	186,950	96.0
North Carolina	7,499	104,742	7.2	76,767	78,641	97.6
North Dakota	2,569	11,358	22.6	9,262	9,405	98.5
Ohio	175,302	190,666	91.9	138,441	132,241	104.7
Oklahoma	33,053	51,473	64.2	48,511	48,008	101.0
Oregon	9,565	37,599	25.4	22,961	36,070	63.7
Pennsylvania	159,600	185,900	85.9	117,879	118,775	99.2
Rhode Island	14,912	14,198	105.0	9,190	9,462	97.1
South Carolina	6,163	58,847	10.5	37,730	47,362	79.7
South Dakota	9,357	12,272	76.2	10,373	9,779	106.1
Tennessee	13,140	87,431	15.0	58,251	64,013	91.0
Texas	79,500	256,700	31.0	219,423	250,427	87.6
Utah	21,170	22,375	94.6	37,274	34,654	107.6
Vermont	3,855	8,466	45.5	5,214	7,096	73.5
Virginia	25,732	93,954	27.4	68,465	69,066	99.1
Washington	52,784	63,824	82.7	56,668	54,620	103.7
West Virginia	1,385	36,214	3.8	28,197	29,433	95.8
Wisconsin	83,341	74,364	112.1	64,631	49,304	131.1
Wyoming	4,646	6,483	71.7	8,932	8,588	104.0

*Not available.

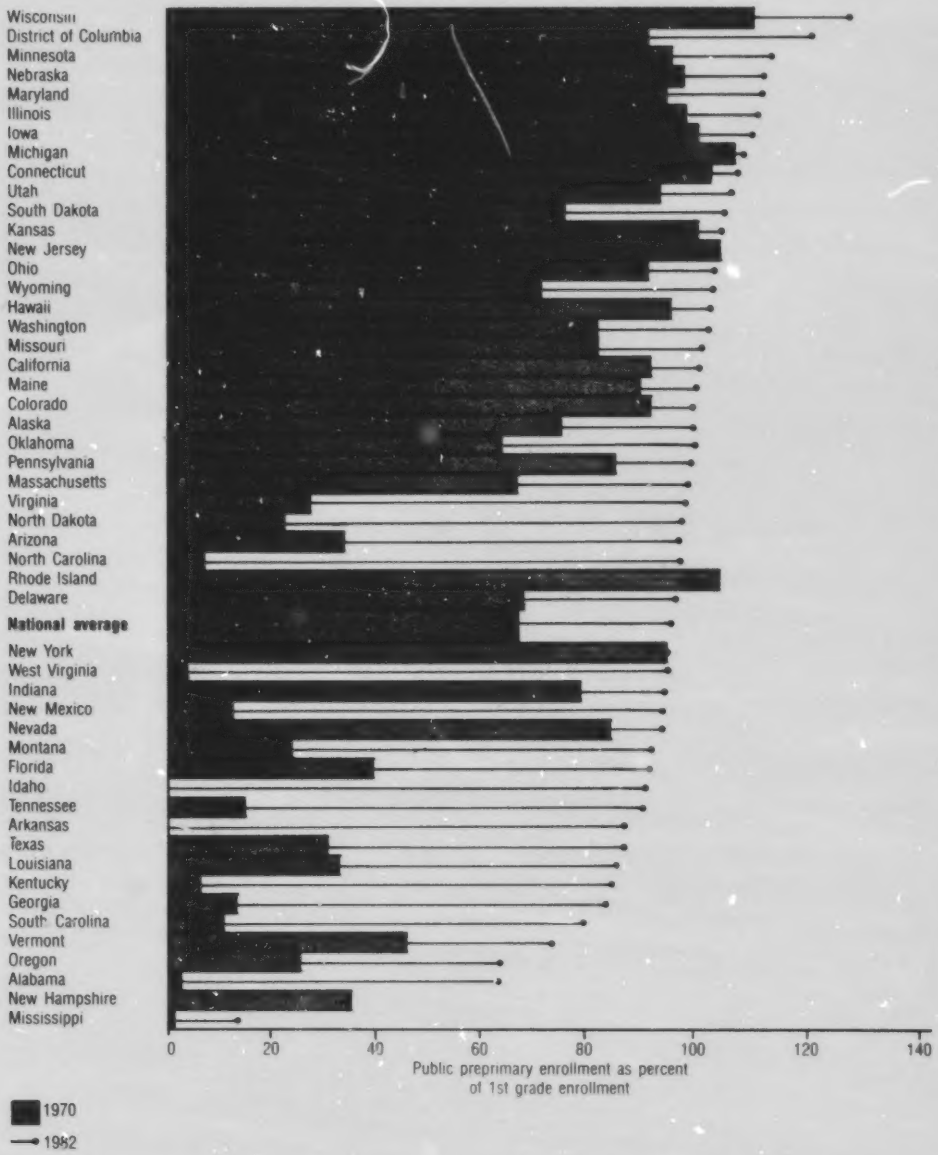
[1]Includes nursery schools and kindergartens operated as part of the regular public school system. Preprimary enrollment can exceed first grade enrollment, as shown in percentages of over 100.0 percent, because it may include nursery school enrollment and students served part-time.

[2]Includes estimates for nonreporting States.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Schools: Fall 1970*, 1971; and Common Core of Data, Part IV—Enrollment: Fall 1982, unpublished tabulations (November 1983).

Chart 1.8

Public Preprimary Enrollment Compared to 1st Grade Enrollment



Preprimary enrollment in the public schools equaled or exceeded 1st grade enrollment in some States in 1982. Many States with low preprimary enrollments in 1970 greatly expanded their programs over the ensuing decade.

Table 1.9

Number, Enrollment, and Average Enrollment Size of Public Elementary/Secondary Schools, by Level of School and Grade Span Served: 1970-71 and 1980-81

Level[1] and Grade Span	1970-71			1980-81		
	Number of Schools[2]	Enrollment, in Thousands	Average Enrollment Size[3]	Number of Schools[2]	Enrollment, in Thousands	Average Enrollment Size[3]
Total schools	90,540	45,390	504	85,888	40,862	483
Elementary schools	61,060	24,695	408	54,224	20,361	378
Preprimary (or 1st) only (prekindergarten, kindergarten, or 1st grade)	994	228	229	1,159	429	376
Preprimary (or 1st) to 2nd	881	215	245	864	236	276
Preprimary (or 1st) to 5th	5,727	2,559	447	8,966	3,730	418
Preprimary (or 1st) to 6th	32,636	14,895	456	25,010	9,969	401
Preprimary (or 1st) to 7th	1,979	820	414	1,020	392	396
Preprimary (or 1st) to 8th	9,854	3,338	339	6,710	1,809	274
Any combination of 4th, 5th, or 6th	1,630	507	311	1,627	567	354
Other spans, lowest grade less than 5th and highest grade to 8th[4]	2,351	547	295	3,978	1,589	401
Junior high or middle schools	10,395	7,380	710	11,593	6,994	608
5th to 8th	722	368	510	944	453	483
6th to 8th	1,662	1,093	657	3,144	1,857	595
7th to 8th	2,450	1,250	510	2,550	1,259	498
7th to 9th	4,711	4,120	875	3,340	2,477	744
Other spans, lowest grade 5th or higher and highest grade 7th to 9th[4]	850	548	645	1,615	948	584
Secondary schools, including high schools	15,507	12,040	776	16,285	12,467	787
7th to 12th	4,114	2,025	492	3,677	1,391	382
8th to 12th	545	401	735	516	332	671
9th to 12th	7,242	5,596	773	8,175	6,895	862
10th to 12th	3,147	3,705	1,177	2,583	2,733	1,123
Other spans, lowest grade 7th or higher and highest grade 10th to 12th[4]	459	313	682	1,334	1,116	875
Combined elementary/secondary schools	1,330	844	635	1,586	762	487
Preprimary (or 1st) to 12th	883	582	659	1,084	565	529
Other combined spans[5]	447	262	586	502	197	395
Schools not classified by both lowest and highest[6]	2,248	431	92	2,200	278	148

[1]Level of school is a classification based on lowest and highest grades served and, in those cases where the lowest or highest grade is unclassified, on institutional reports. Elementary includes schools with lowest grade less than 5th and no grade higher than 8th, except for the few schools organized with only 5th to 6th grades. Junior high and middle schools have no grade lower than 5th and no grade higher than 9th. Secondary schools have no grade lower than 7th and the highest grade 10th, 11th, or 12th. Combined elementary/secondary schools span the elementary through secondary grades.

[2]Number of schools may include schools for which enrollment data were missing or equal to zero.

[3]Average enrollment size was computed for schools that reported enrollments greater than zero. These schools numbered 90,042 in 1970-71 and 84,599 in 1980-81. Consequently, average enrollment size computed by dividing enrollment by total number of schools will only approximate the figures shown in this table.

[4]These schools include spans with unclassified lowest or highest grade. In these cases, the classification of level is based on institutional reports.

[5]These combined elementary/secondary schools were characterized by three typical spans: the lowest grade less than 5th and the highest grade 9th; or the lowest grade less than 7th and the highest grade 10th or 11th; or the lowest grade 2nd thru 6th and the highest grade 12th. The preponderance of these schools classified themselves as combined elementary/secondary.

[6]These schools were characterized by both unclassified lowest and highest grades. A majority of these schools classified themselves as special education schools.

NOTE: Data shown in this table, particularly for 1970-71, differ from those reported elsewhere in this and previous publications because they are derived from the school universe surveys, not the annual State reports, and are categorized according to a different classification scheme. Data for schools in three States in 1970-71 were missing or significantly underreported and were replaced with 1971-72 data. With this adjustment, 1 percent more schools and 1 percent fewer students were reported from the school universe survey than from the annual 1970-71 report. For 1980-81, the school universe survey figures were only slightly lower than the State annual reports, and no States were missing.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Elementary and Secondary General Information Survey, School Universe File, 1970-71, 1971-72; and Common Core of Data, School Universe File, 1980-81, unpublished tabulations (October 1983).

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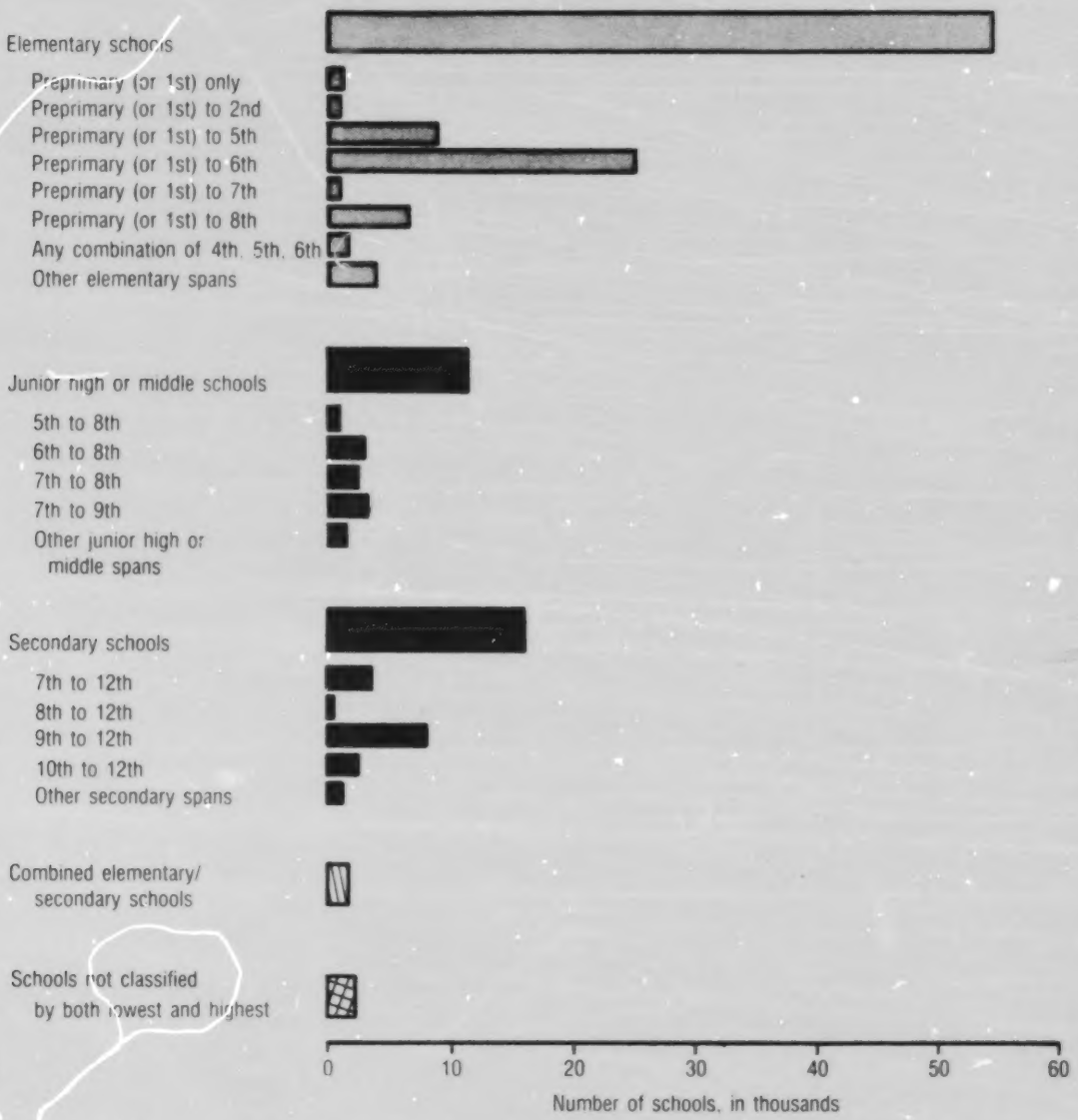
Chart 1.9

Number of Public Elementary/Secondary Schools, by Level of School and Grade Span: 1980-81



The organization of public elementary/secondary schools was as varied in 1980-81 as it had been in 1970-71. For example, in elementary, junior high/middle, and secondary schools, the most typical grade spans represented, at most, half of the schools and enrollments in 1980-81.

Table 1.10

Trends in Number of Classroom Teachers in Regular Elementary/ Secondary Schools, by Control and Level of School: Fall 1970 to Fall 1992

(In Thousands)

Fall of Year	Total Teachers			Public School Teachers			Private School Teachers		
	Pre-primary to 12th Grade	Elementary	Secondary	Pre-primary to 12th Grade	Elementary	Secondary	Pre-primary to 12th Grade	Elementary	Secondary
1970	**2,288**	**1,281**	**1,007**	2,055	1,128	927	233	153	80
1971	**2,293**	**1,263**	**1,030**	2,063	1,111	952	230	152	78
1972	**2,334**	**1,294**	**1,040**	2,103	1,140	963	231	154	77
1973	**2,369**	**1,306**	**1,063**	2,133	1,149	984	236	157	79
1974	**2,410**	**1,331**	**1,079**	2,166	1,167	998	245	164	81
1975	**2,451**	**1,352**	**1,099**	2,196	1,180	1,016	255	172	83
1976	**2,454**	**1,349**	**1,105**	2,186	1,166	1,020	269	183	85
1977	**2,488**	**1,375**	**1,113**	2,209	1,185	1,024	278	190	89
1978	**2,478**	**1,375**	**1,103**	2,207	1,190	1,016	273	185	87
1979	**2,459**	**1,378**	**1,081**	2,183	1,190	993	276	188	88
1980[1]	**2,439**	**1,365**	**1,074**	2,162	1,177	985	277	188	89
1981	**2,403**	**1,349**	**1,054**	2,117	1,155	962	286	194	92
1982	**2,401**	**1,362**	**1,039**	2,110	1,165	945	291	197	94
					Projected[2]				
1983	**2,404**	**1,362**	**1,042**	2,108	1,163	945	296	199	97
1984	**2,401**	**1,358**	**1,043**	2,108	1,162	946	293	196	97
1985	**2,413**	**1,371**	**1,042**	2,119	1,174	945	294	197	97
1986	**2,438**	**1,403**	**1,035**	2,135	1,198	937	303	205	98
1987	**2,452**	**1,433**	**1,019**	2,151	1,227	924	301	206	95
1988	**2,468**	**1,472**	**996**	2,162	1,258	904	306	214	92
1989	**2,493**	**1,510**	**983**	2,179	1,288	891	314	222	92
1990	**2,527**	**1,550**	**977**	2,209	1,321	888	318	229	89
1991	**2,569**	**1,584**	**985**	2,253	1,353	900	316	231	85
1992	**2,624**	**1,618**	**1,006**	2,299	1,379	920	325	239	86

[1] Estimated.

[2] Preliminary.

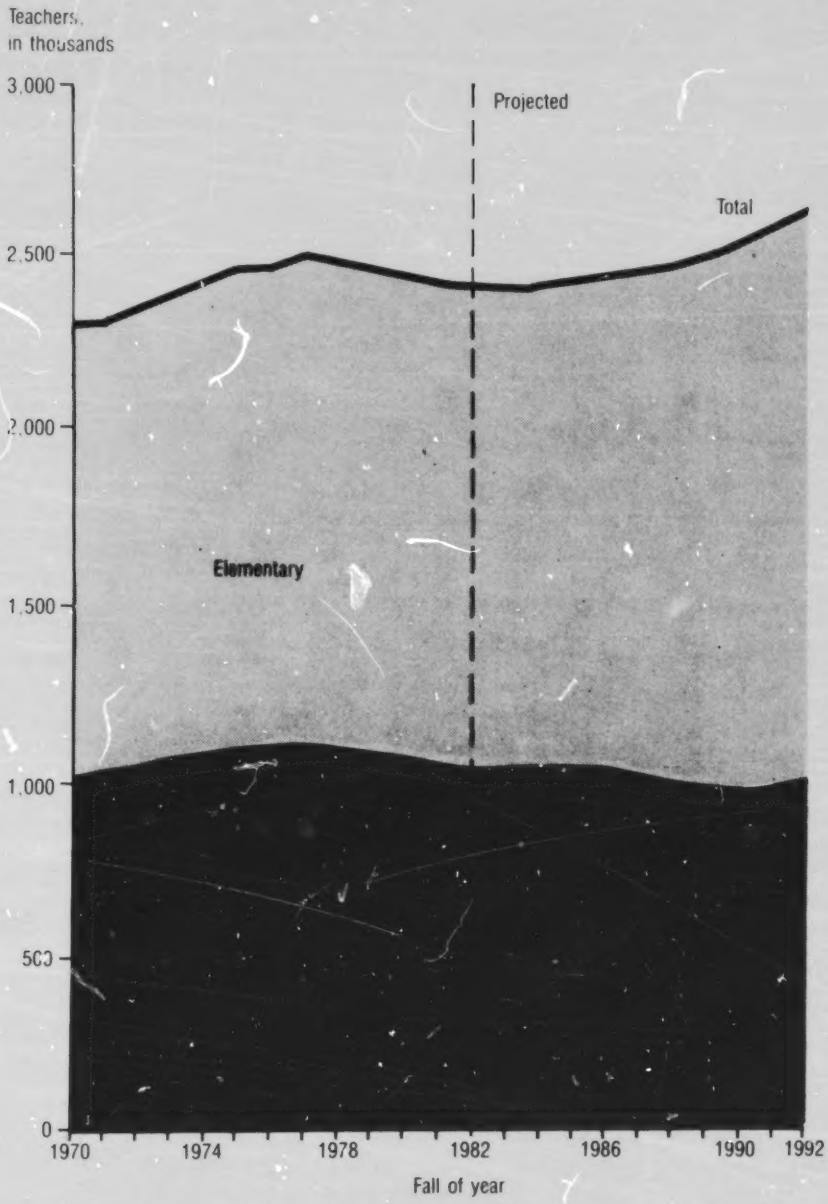
[3] For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools*, various years; *Statistics of Nonpublic Elementary and Secondary Schools*, various years; and *Projections of Education Statistics to 1992-93*, forthcoming.

Chart 1.10

Elementary/Secondary Classroom Teachers, by Level



The number of public and private elementary school teachers is projected to increase steadily beginning in the mid-1980's, while the number of secondary school teachers is expected to decline until the 1990's.

Table 1.11

Trends in Number of Classroom Teachers per 1,000 Students in Regular Elementary/Secondary Schools, by Control and Level of School: Fall 1970 to Fall 1992

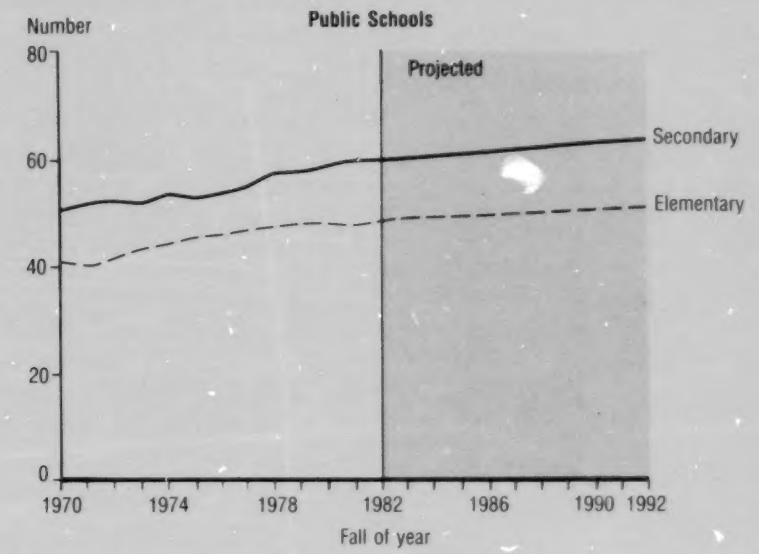
Fall of Year	Public School Teachers		Private School Teachers	
	Elementary	Secondary	Elementary	Secondary
1970	41.0	50.4	37.8	61.0
1971	40.1	51.8	39.4	61.3
1972	41.7	52.3	41.1	61.7
1973	43.5	51.8	42.7	62.1
1974	44.2	53.5	44.6	62.5
1975	46.0	53.1	46.2	62.9
1976	45.9	54.0	47.8	63.3
1977	47.5	55.0	50.0	66.3
1978	47.6	57.9	49.6	64.3
1979	48.5	58.1	51.1	65.4
1980	48.7	58.5	51.9	66.5
1981	48.5	59.1	52.3	67.2
1982	48.8	59.9	53.3	68.7
		Projected*		
1983	49.4	60.6	53.8	69.0
1984	49.6	61.0	54.4	69.2
1985	49.8	61.4	54.8	69.6
1986	50.1	61.8	55.3	69.8
1987	50.4	62.3	55.8	70.2
1988	50.6	62.8	56.3	70.4
1989	50.8	63.2	56.8	70.7
1990	51.0	63.6	57.2	71.0
1991	51.3	64.0	57.8	71.2
1992	51.5	64.4	58.2	71.6

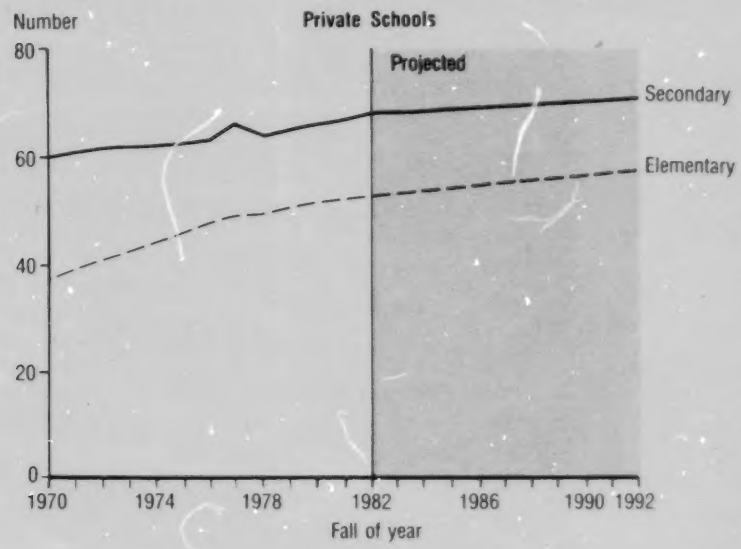
*For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools*; *Statistics of Nonpublic Elementary and Secondary Schools*; and *Projections of Education Statistics to 1992-93*, forthcoming.

Chart 1.11

Classroom Teachers Per 1,000 Students in Elementary/Secondary Schools





The ratio of teachers to students is projected to rise somewhat in the 1980's and into the 1990's in public and private schools at both elementary and secondary levels. The increase is not expected to be as appreciable as in the 1970's.

Table 1.12

Trends in Estimated Demand for Classroom Teachers in Elementary/Secondary Schools and Estimated Supply of New Teacher Graduates: Fall 1970 to Fall 1992

(Numbers in Thousands)

Fall of Year	Total Estimated Teacher Demand	Estimated Demand for Additional Teachers					Estimated Supply of New Teacher Graduates[1]	Supply as Percent of Demand
		Total	Public	Private	Elementary	Secondary		
1970	2,288	208	192	16	115	93	284	136.5
1971	2,293	163	152	11	71	92	314	192.6
1972	2,334	179	164	15	107	72	317	177.1
1973	2,369	175	156	19	89	86	313	178.9
1974	2,410	183	160	23	103	80	279	152.5
1975	2,451	186	161	25	101	85	238	128.0
1976	2,454	150	122	28	78	72	222	148.0
1977	2,488	181	154	27	107	74	194	107.2
1973-77	12,172	**875**	753	122	**478**	**397**	**1,246**	142.4
1978	2,478	138	129	9	82	56	181	131.2
1979	2,459	129	109	20	85	44	163	126.4
1980	2,439	127	110	17	69	58	144	113.4
1981	2,403	110	85	25	66	44	141	128.2
1982	2,401	143	120	23	94	49	143	100.0
1978-82	12,180	**647**	553	94	**396**	**251**	**772**	119.3
					Projected[2]			
1983	2,404	148	125	23	82	66	146	98.6
1984	2,401	142	127	15	78	64	146	102.8
1985	2,413	157	138	19	95	62	146	93.0
1986	2,438	170	143	27	114	56	144	84.7
1987	2,452	160	144	16	114	46	142	88.8
1983-87	12,108	**777**	677	100	**483**	**294**	**724**	93.2
1988	2,468	164	140	24	126	38	139	84.8
1989	2,493	173	146	27	126	47	139	80.3
1990	2,527	183	160	23	131	52	139	76.0
1991	2,569	195	176	19	129	66	138	70.8
1992	2,624	209	181	28	129	80	137	65.6
1988-92	12,681	**924**	803	121	**641**	**283**	**692**	74.9

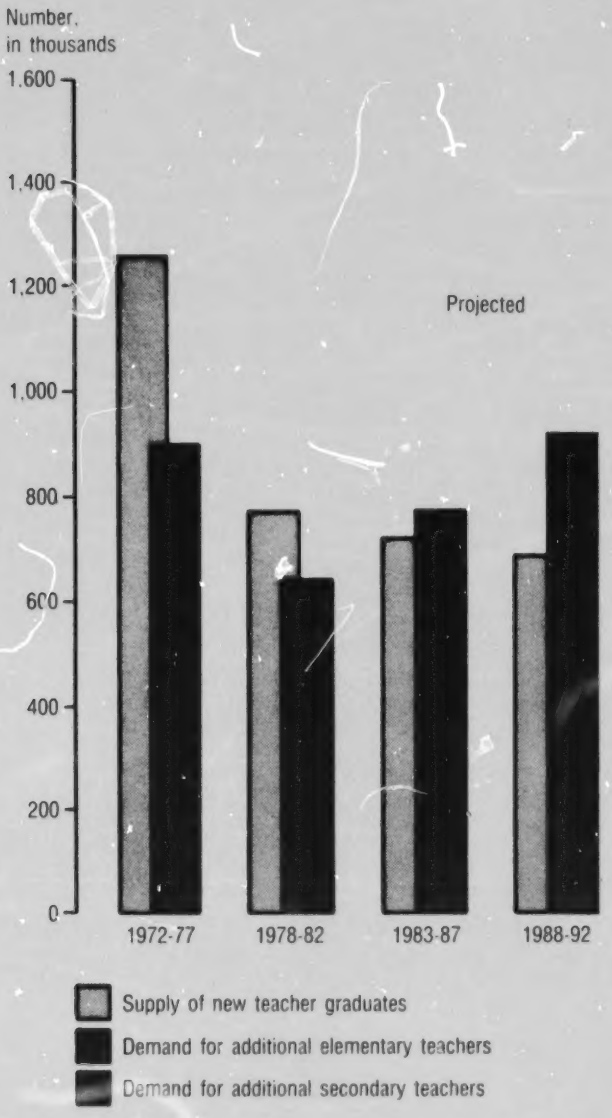
[1]Estimates for 1971 through 1980 are from National Education Association, *Teacher Supply and Demand in Public Schools, 1980-81*. Other estimates developed by the National Center for Education Statistics.

[2]For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1992-93*, forthcoming; and National Education Association, *Teacher Supply and Demand in Public Schools, 1980-81*, 1981, copyrighted.

Chart 1.12

Estimated Teacher Supply and Estimated Demand for Additional Teachers



Beginning in the mid-1980's, the demand for additional teachers is projected to exceed the supply of new teacher graduates. Elementary schools should provide two-thirds of this demand.

Table 1.13

Number of Public Elementary/Secondary Classroom Teachers, by State: Fall 1970 and Fall 1981

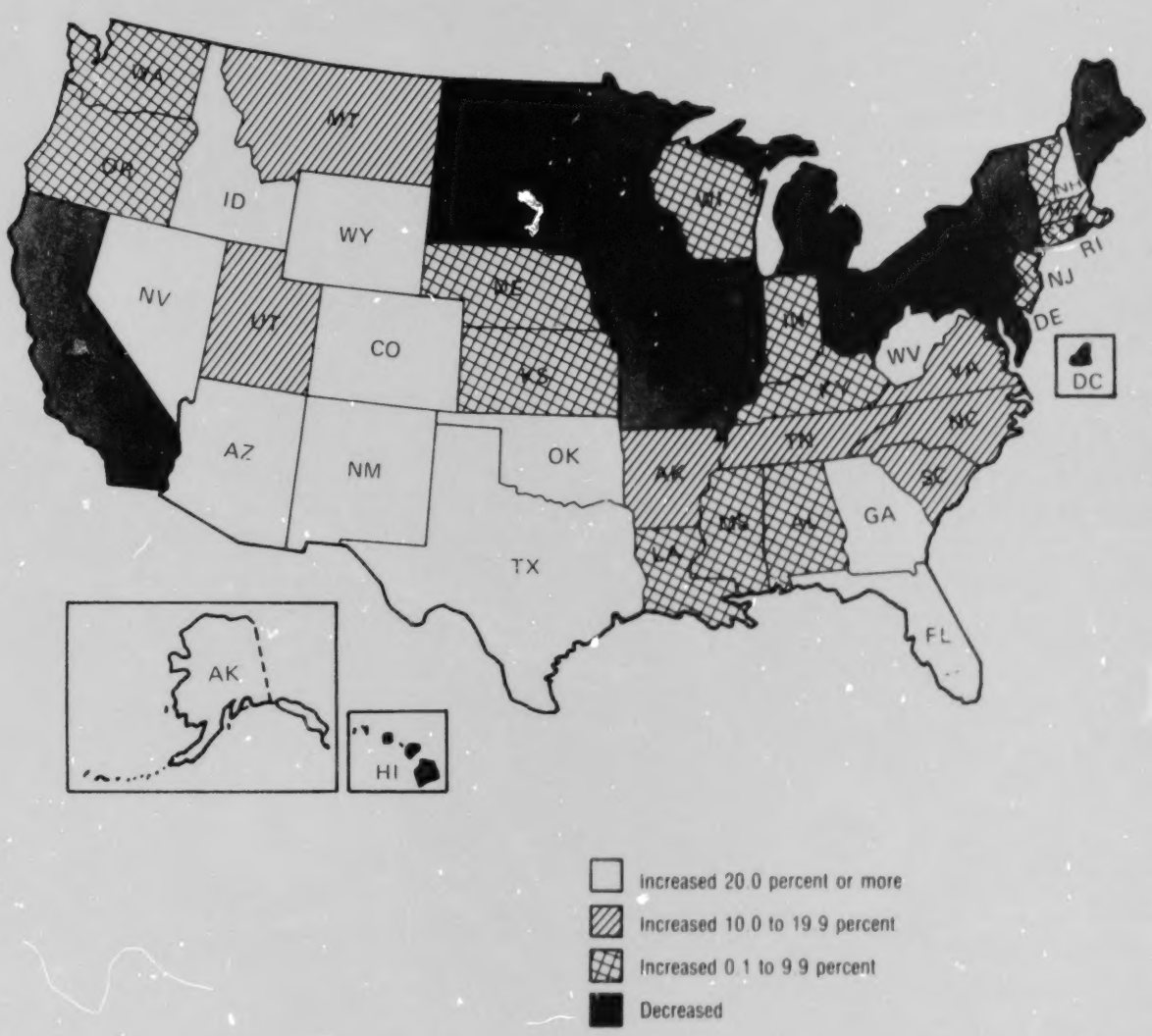
State	Classroom Teachers, in Full-Time Equivalents		
	Fall 1970	Fall 1981	Percent Change
United States	2,055,218	2,116,664	3.0
Alabama	33,026	34,224	3.6
Alaska	3,821	5,665	48.3
Arizona	18,772	25,601	36.4
Arkansas	21,122	23,497	11.2
California	193,000	170,007	-11.9
Colorado	23,617	29,119	23.3
Connecticut	31,323	33,723	7.7
Delaware	6,034	5,331	-11.7
District of Columbia	7,486	5,132	-31.4
Florida	62,419	74,872	20.0
Georgia	44,007	56,217	27.7
Hawaii	7,985	7,165	-10.3
Idaho	8,047	9,798	21.8
Illinois	111,827	103,793	-7.2
Indiana	50,421	51,303	1.7
Iowa	32,659	31,244	-4.3
Kansas	25,884	26,179	1.1
Kentucky	30,180	31,666	4.9
Louisiana	36,469	39,967	9.6
Maine	11,170	10,736	-3.9
Maryland	40,810	39,120	-4.1
Massachusetts	55,300	62,227	12.5
Michigan	93,000	78,768	-15.3
Minnesota	43,809	42,836	-2.2
Mississippi	22,533	24,430	8.4
Missouri	48,286	48,135	-0.3
Montana	8,406	9,310	10.8
Nebraska	17,230	17,410	1.0
Nevada	4,967	7,180	44.6
New Hampshire	*7,441	9,729	30.7
New Jersey	72,140	75,231	4.3
New Mexico	11,620	14,296	23.0
New York	177,066	157,201	-11.2
North Carolina	49,565	55,833	12.6
North Dakota	7,659	6,995	-8.7
Ohio	104,680	96,449	-7.9
Oklahoma	28,184	33,904	20.3
Oregon	21,641	22,480	3.9
Pennsylvania	106,465	106,221	-0.2
Rhode Island	8,988	8,895	-1.0
South Carolina	28,578	32,007	12.0
South Dakota	8,698	7,964	-8.4
Tennessee	35,450	40,875	15.3
Texas	129,440	159,640	23.3
Utah	11,350	12,983	14.4
Vermont	5,750	6,103	6.1
Virginia	47,903	55,471	15.8
Washington	*33,380	34,576	3.6
West Virginia	16,582	21,870	31.9
Wisconsin	*44,460	46,652	4.9
Wyoming	4,568	6,634	45.2

*Estimated

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools, Fall 1971*, 1971, and Common Core of Data, unpublished tabulations (November 1983).

Chart 1.13

Percent Change in Number of Public Elementary/Secondary Classroom Teachers Between 1970 and 1981, by State



While nationally, the number of public school classroom teachers was 3 percent more in 1981 than in 1970, in several States with growing enrollments, the increase was 20 percent or more. Decreases were registered in many Northeast and North Central States and in California and Hawaii.

Table 1.14

Current Expenditures per Pupil in Average Daily Attendance in Public Elementary/Secondary Schools, by State: 1970-71 and 1981-82

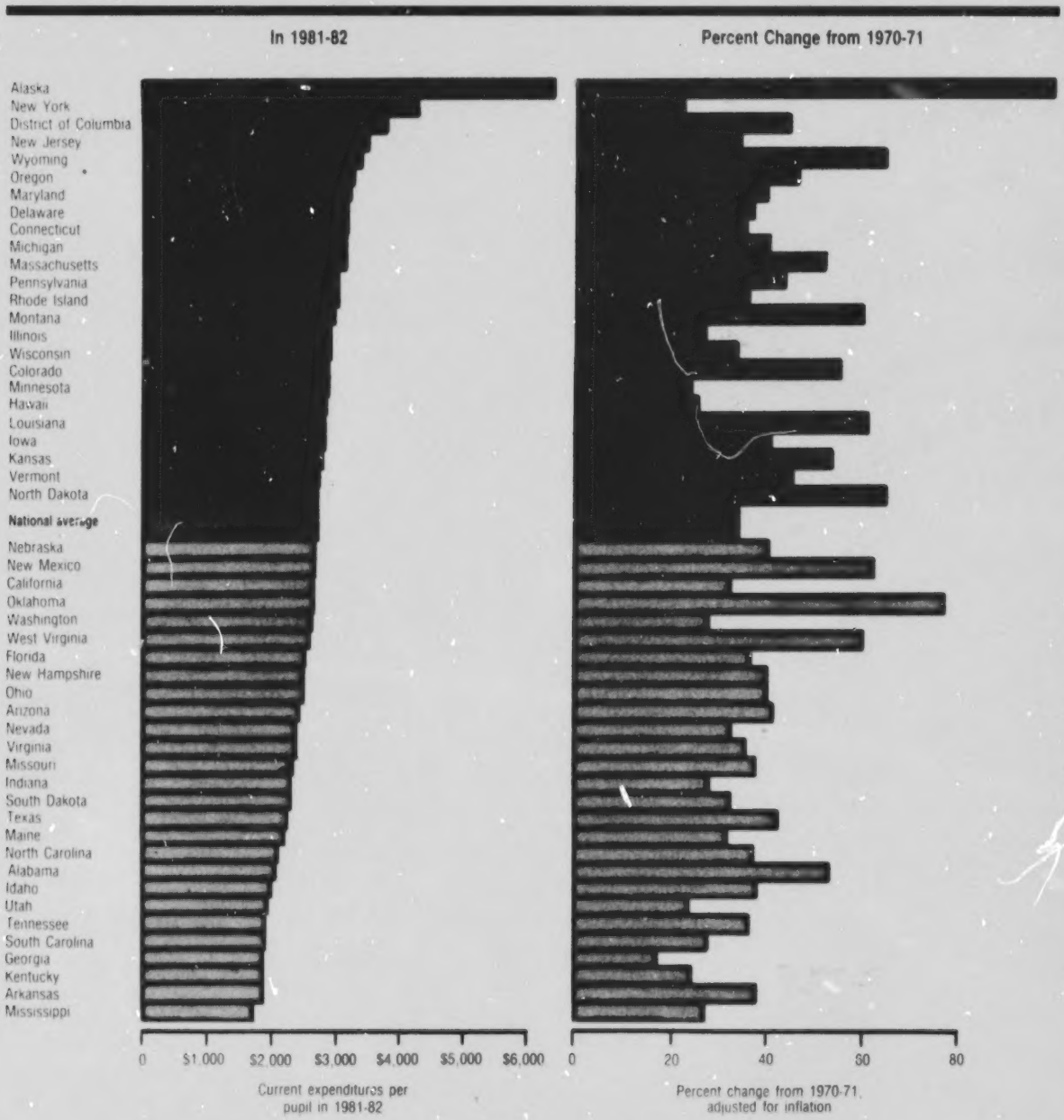
State	Current Expenditures[1] per Pupil in 1981-82	Current Expenditures per Pupil in 1970-71		Percent Increase in Current Expenditures per Pupil from 1970-71	
		Current (1970-71) Dollars	Constant (1981-82) Dollars[2]	Current (1970-71) Dollars	Constant (1981-82) Dollars[2]
United States	$2,724	$911	$2,031	199.0	34.1
Alabama	2,063	605	1,349	241.0	52.9
Alaska	6,429	1,507	3,359	326.6	91.4
Arizona	2,462	783	1,745	214.4	41.1
Arkansas	1,841	600	1,337	206.8	37.7
California	2,671	906	2,019	194.8	32.3
Colorado	2,914	841	1,875	246.5	55.4
Connecticut	3,189	1,056	2,354	202.0	35.5
Delaware	3,198	1,047	2,334	205.4	37.0
District of Columbia	3,792	1,178	2,626	221.9	44.4
Florida	2,528	829	1,848	204.9	36.8
Georgia	1,762	714	1,592	160.8	17.0
Hawaii	2,462	1,023	2,280	179.8	25.5
Idaho	1,996	650	1,449	207.1	37.8
Illinois	2,936	1,036	2,309	183.4	27.2
Indiana	2,306	809	1,803	185.0	27.9
Iowa	2,826	901	2,008	213.7	40.7
Kansas	2,815	823	1,834	242.0	53.5
Kentucky	1,857	670	1,493	177.2	24.4
Louisiana	2,829	791	1,763	257.6	60.5
Maine	2,205	751	1,674	193.6	31.7
Maryland	3,235	1,039	2,316	211.4	39.7
Massachusetts	3,137	927	2,066	238.4	51.8
Michigan	3,145	1,007	2,245	212.3	40.1
Minnesota	2,905	1,049	2,338	176.9	24.3
Mississippi	1,706	602	1,342	183.4	27.1
Missouri	2,342	763	1,701	206.9	37.7
Montana	2,998	840	1,872	256.9	60.1
Nebraska	2,704	865	1,928	212.6	40.2
Nevada	2,424	820	1,828	195.6	32.6
New Hampshire	2,502	801	1,785	212.4	41.2
New Jersey	3,515	1,177	2,624	198.6	34.0
New Mexico	2,703	746	1,663	262.3	62.5
New York	4,280	1,567	3,493	173.1	22.5
North Carolina	2,099	686	1,529	206.0	37.3
North Dakota	2,729	742	1,654	267.8	65.0
Ohio	2,492	798	1,779	212.3	40.1
Oklahoma	2,667	676	1,507	294.5	77.0
Oregon	3,299	1,012	2,256	226.0	46.2
Pennsylvania	3,050	952	2,122	220.4	43.7
Rhode Island	3,040	1,002	2,233	203.4	36.1
South Carolina	1,876	659	1,469	184.7	27.7
South Dakota	2,300	776	1,730	196.4	32.9
Tennessee	1,895	623	1,389	204.2	36.4
Texas	2,229	703	1,567	217.1	42.2
Utah	1,931	701	1,563	175.5	23.5
Vermont	2,763	854	1,904	223.5	45.1
Virginia	2,397	792	1,765	202.7	35.8
Washington	2,650	928	2,069	185.6	28.1
West Virginia	2,593	726	1,618	257.2	60.3
Wisconsin	2,935	984	2,193	198.3	33.8
Wyoming	3,417	931	2,075	267.0	64.7

[1]Includes expenditures for day schools only; excludes adult education, community colleges, and community services.
[2]Adjusted for inflation using the Index of State and Local Governments Purchases.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Expenditures and Revenues for Public Elementary and Secondary Education: 1970-71*, 1973, and Common Core of Data, unpublished tabulations (February, 1984).

Current Expenditures per Pupil in Public Elementary/Secondary Schools



Current expenditures per pupil were highest in Alaska and New York and lowest in Mississippi and Arkansas in 1981-82. From 1970-71 to 1981-82, Alaska and Oklahoma registered the largest increases, while New York and Georgia recorded the smallest.

Table 1.15

Selected Fiscal and Demographic Features of the States, Indexed to National Average: 1971-72 and 1981-82

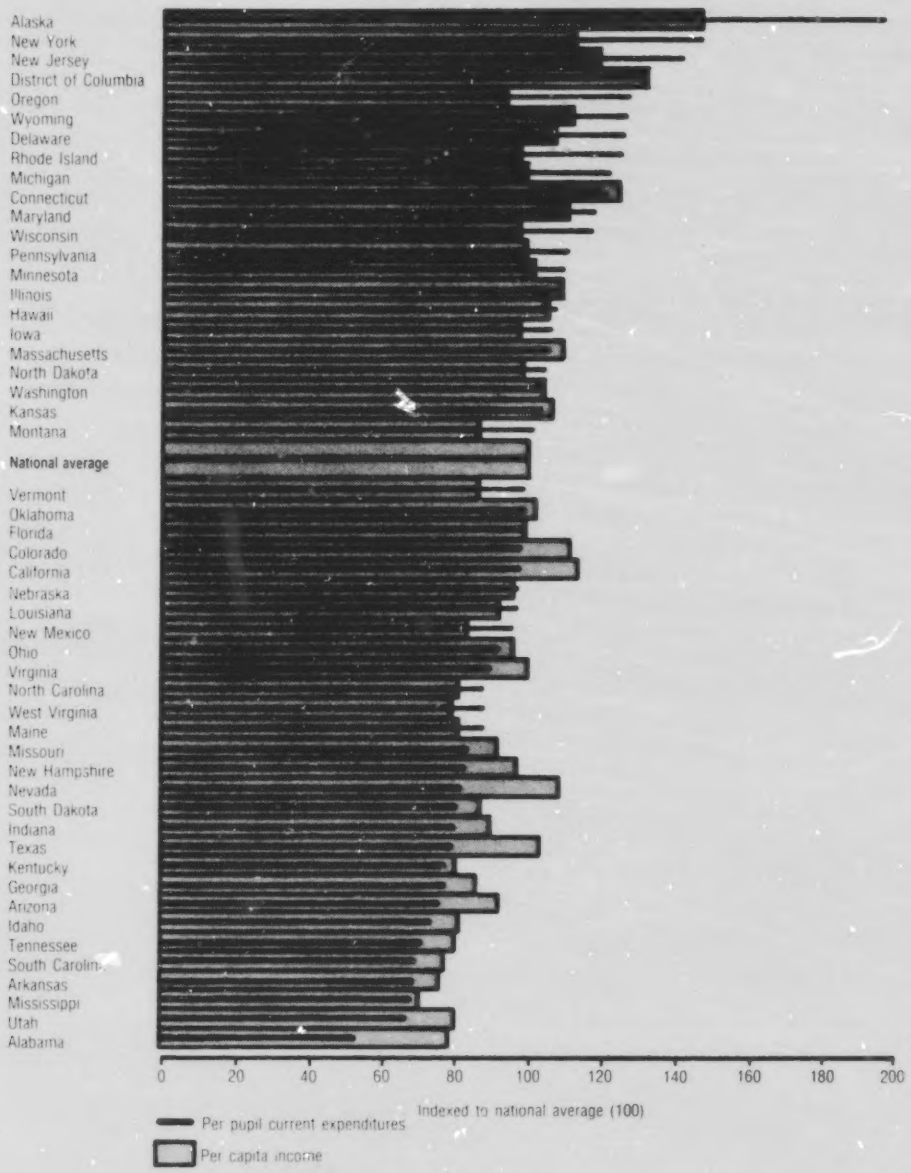
State	1971-72					1981-82				
	Per Capita Income	State/ Local School Tax Efforts	Education's Share of State/Local Expenditures	Public School Students as Percent of Population	Current Expenditures per Pupil	Per Capita Income	State/ Local School Tax Efforts	Education's Share of State/Local Expenditures	Public School Students as Percent of Population	Current Expenditures per Pupil
United States	100	100	100	100	100	100	100	100	100	100
Alabama	76	67	83	105	58	78	74	92	109	54
Alaska	114	188	87	119	160	146	177	74	116	196
Arizona	95	116	110	104	82	92	105	104	108	76
Arkansas	75	76	94	102	63	76	101	107	108	69
California	111	104	93	112	98	113	87	88	102	98
Colorado	102	110	104	106	90	111	99	114	105	98
Connecticut	119	102	110	98	124	124	89	107	96	120
Delaware	115	112	110	107	112	106	111	80	89	125
District of Columbia	139	78	72	85	132	131	73	61	80	130
Florida	97	78	104	89	91	99	83	101	82	99
Georgia	87	75	95	103	76	86	99	95	108	78
Hawaii	111	98	73	100	107	105	93	70	93	107
Idaho	84	96	88	114	75	81	110	104	122	74
Illinois	114	90	101	92	111	109	95	98	91	109
Indiana	97	102	123	103	85	[illegible]	110	117	105	80
Iowa	96	108	124	107	103	[illegible]	110	104	104	105
Kansas	99	94	105	99	89	106	102	105	95	104
Kentucky	80	76	86	99	69	80	93	89	103	78
Louisiana	79	114	97	103	91	92	101	95	101	97
Maine	80	110	92	110	84	81	114	100	110	88
Maryland	109	112	109	102	112	110	100	96	96	117
Massachusetts	108	86	95	90	101	109	93	95	97	105
Michigan	109	116	105	109	117	99	123	103	114	121
Minnesota	96	137	109	111	107	101	116	99	104	109
Mississippi	70	78	86	105	68	70	100	88	107	68
Missouri	96	90	105	94	84	92	89	110	92	84
Montana	89	104	100	111	93	86	134	122	106	101
Nebraska	97	73	106	101	74	96	102	111	101	97
Nevada	113	110	89	110	93	108	70	89	99	82
New Hampshire	94	90	95	95	86	97	89	103	98	83
New Jersey	116	100	112	90	132	118	107	111	93	141
New Mexico	79	106	107	115	78	83	141	113	116	96
New York	117	120	88	84	156	111	109	87	87	146
North Carolina	85	86	105	101	76	81	102	111	107	88
North Dakota	83	98	96	108	85	98	109	100	105	104
Ohio	101	92	106	102	88	96	93	109	101	92
Oklahoma	84	84	88	104	65	102	105	109	106	99
Oregon	95	116	108	99	102	93	125	107	96	125
Pennsylvania	99	100	107	91	110	99	105	105	94	110
Rhode Island	100	86	91	91	110	97	95	86	84	124
South Carolina	77	92	111	108	75	77	107	100	112	69
South Dakota	82	98	102	113	79	87	107	92	106	81
Tennessee	82	80	94	102	71	80	91	92	105	71
Texas	89	96	112	105	98	103	98	116	110	79
Utah	83	116	102	125	73	80	132	121	133	67
Vermont	82	157	88	110	125	86	118	96	104	99
Virginia	96	92	112	102	89	100	91	109	105	90
Washington	100	108	97	107	90	104	105	107	101	104
West Virginia	80	86	93	102	75	79	123	113	111	88
Wisconsin	95	112	97	97	108	97	107	105	95	116
Wyoming	96	110	96	117	97	111	114	112	114	125
United States average	*($10,459)	(5.1%)	(27.7%)	(20.5%)	*($2,082)	($11,051)	(4.4%)	(24.5%)	(16.1%)	($2,708)

*Expressed in constant 1982 dollars, using Consumer Price Index for income and Index of State and Local Governments Purchases for expenditures.

SOURCE: Per capita income from U.S. Department of Commerce, Bureau of Economic Analysis, *News*, bulletin, September 6, 1983. Share allocated to elementary and secondary education from U.S. Department of Commerce, *Compendium of Government Finances, 1972* and Census of Governments, *Governmental Finances, 1981-82*, 1983. Average daily attendance from National Education Association, *Estimates of School Statistics, 1973-74*, 1975, and revised unpublished data for 1981-82. Population from U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, various years. State/local school tax efforts calculated from State/local school revenues as reported by the National Education Association and other sources cited above. Expenditures per pupil from National Education Association, *Estimates of School Statistics, 1973-74*, 1975, copyrighted, and revised unpublished data for 1981-82.

Chart 1.15

Per Pupil Expenditures and Per Capita Income Indexed to National Average, by State: 1981-82



When indexed to the 1981-82 national average, many States with incomes 10 percent or more below average had an even lower index of per pupil expenditures. The majority of States with incomes 10 percent or more above average had an index of per pupil expenditures that exceeded their per capita income index number.

Table 1.16

Percentage Distribution of Federal, State, and Local Revenues for Public Elementary/Secondary Education: Selected Years, 1971-72 to 1981-82

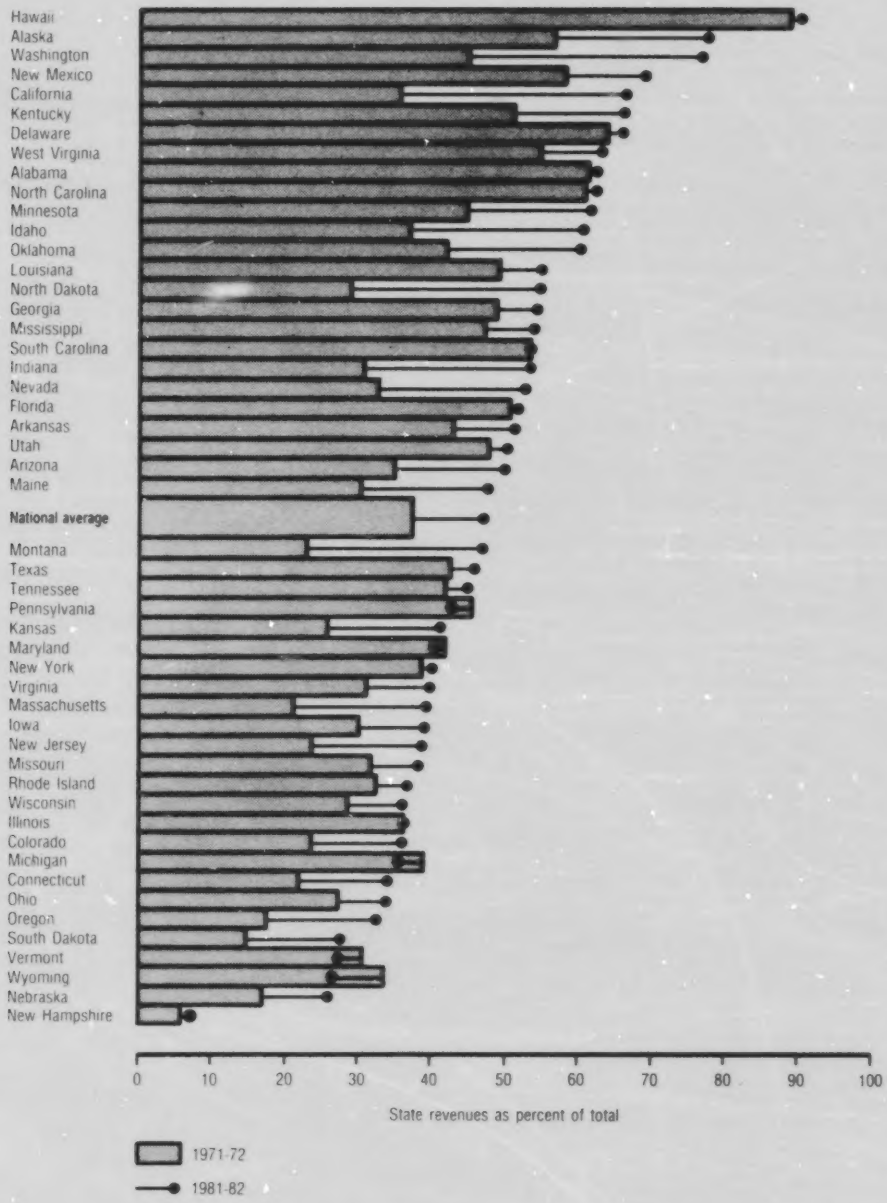
State	1971-72			1974-75			1979-80			1981-82		
	Federal	State	Local	Federal	State	Local	Federal	State	Local	Federal	State	Local
	Percentage Distribution											
United States	7.5	37.6	54.9	7.7	41.2	51.1	8.8	46.7	44.5	7.4	47.2	45.4
Alabama	17.8	61.1	21.1	17.6	58.7	23.7	12.2	66.9	20.9	14.6	62.0	23.4
Alaska	11.8	56.5	31.7	17.2	61.6	21.2	12.4	67.3	20.3	4.0	77.3	18.7
Arizona	8.2	35.1	56.7	9.4	42.2	48.4	10.5	39.4	50.1	8.7	50.0	41.2
Arkansas	15.5	43.0	41.5	16.2	45.6	38.2	13.6	49.8	36.6	13.7	51.3	35.0
California	6.5	35.3	58.2	9.3	39.1	51.6	9.4	69.4	21.2	8.6	66.2	25.2
Colorado	7.2	23.9	68.9	6.9	40.0	53.1	5.9	39.4	54.7	5.5	36.2	58.3
Connecticut	2.6	22.1	75.3	2.9	24.6	72.5	6.0	31.1	62.9	5.6	34.1	60.3
Delaware	7.1	63.6	29.3	8.1	67.1	24.8	12.8	63.6	23.6	10.5	65.6	23.9
District of Columbia	13.3	—	86.7	18.2	—	81.8	15.8	—	84.2	15.1	—	84.9
Florida	10.8	50.8	38.4	8.2	56.6	35.2	10.7	53.3	36.0	8.2	51.5	40.3
Georgia	12.9	48.6	38.5	11.9	52.3	35.8	11.5	56.4	32.1	9.4	54.1	36.5
Hawaii	8.4	88.7	2.9	9.0	85.1	5.9	12.5	85.2	2.3	9.9	89.7	0.4
Idaho	12.2	36.9	50.9	9.7	42.1	48.2	8.8	50.9	40.3	7.2	60.3	32.5
Illinois	6.6	36.4	57.0	5.4	40.1	54.5	11.4	36.7	51.9	8.1	36.5	55.4
Indiana	5.3	30.8	63.9	5.9	33.5	60.6	6.7	54.4	38.9	5.2	53.4	41.3
Iowa	3.6	30.3	66.1	5.6	41.1	53.3	6.6	41.5	51.9	5.5	39.4	55.1
Kansas	7.6	25.9	66.5	7.2	36.0	56.8	6.7	41.6	51.7	5.0	41.2	53.7
Kentucky	15.9	51.0	33.1	14.3	49.3	36.4	11.9	66.1	22.0	10.7	65.8	23.5
Louisiana	12.3	49.1	38.6	15.5	49.7	34.8	14.1	52.0	33.9	9.6	55.0	35.4
Maine	8.9	30.5	60.6	7.8	43.4	48.8	9.3	47.1	43.6	9.7	48.0	42.3
Maryland	6.9	42.1	51.0	6.6	44.5	48.9	8.0	40.0	52.0	6.7	40.5	52.8
Massachusetts	5.0	21.4	73.6	4.0	24.0	72.0	6.5	36.3	57.2	5.1	39.6	55.3
Michigan	3.3	39.1	57.6	3.4	45.2	51.4	7.1	40.7	52.2	7.6	35.3	57.1
Minnesota	4.3	44.7	51.0	4.3	53.5	42.2	5.7	53.1	41.2	4.7	61.5	33.8
Mississippi	27.0	47.2	25.8	22.5	51.1	26.4	23.4	51.6	25.0	19.5	53.8	26.7
Missouri	7.7	32.0	60.3	7.8	33.4	58.8	9.4	35.5	55.1	7.8	38.4	53.7
Montana	8.2	23.2	68.6	8.2	38.6	53.2	8.1	47.3	44.6	8.0	47.0	45.0
Nebraska	6.0	17.0	77.0	8.2	25.1	66.7	7.2	16.7	76.1	6.8	26.2	67.1
Nevada	6.8	32.7	60.5	5.5	33.7	60.8	8.2	56.1	35.7	7.6	52.6	39.9
New Hampshire	5.3	6.0	88.7	2.6	6.9	90.5	4.9	6.4	88.7	4.0	6.9	89.1
New Jersey	4.3	23.9	71.8	5.2	30.2	64.6	4.0	39.9	56.1	3.5	38.9	57.6
New Mexico	18.9	57.9	23.2	17.2	56.0	26.8	15.6	59.8	24.6	11.1	68.4	20.5
New York	5.3	38.9	55.8	4.6	38.2	57.2	4.9	39.3	55.8	3.7	40.1	56.1
North Carolina	15.4	60.7	23.9	13.3	65.3	21.4	15.0	61.4	23.6	15.4	61.9	22.7
North Dakota	11.8	29.0	59.2	8.4	40.4	51.2	7.2	43.1	49.7	6.8	54.6	38.6
Ohio	5.5	27.3	67.2	5.4	33.8	60.8	7.2	37.5	55.3	5.9	33.9	60.3
Oklahoma	10.2	41.9	47.9	11.2	45.6	43.2	10.8	54.4	34.8	8.0	60.1	32.0
Oregon	4.0	17.8	78.2	5.7	24.8	69.5	9.4	33.8	56.8	8.7	32.7	58.6
Pennsylvania	6.3	45.7	48.0	8.5	47.1	44.4	8.2	43.6	48.2	7.3	42.7	49.9
Rhode Island	8.3	32.7	59.0	8.5	34.3	57.2	5.8	38.7	55.5	4.9	36.8	58.3
South Carolina	17.4	53.4	29.2	14.4	55.7	29.9	14.4	55.2	30.4	13.4	53.6	33.0
South Dakota	12.4	14.9	72.7	14.7	12.3	73.0	13.5	20.3	66.2	9.4	28.2	62.4
Tennessee	13.2	42.0	44.8	10.5	50.1	39.4	12.9	44.6	42.5	12.5	45.0	42.5
Texas	10.3	42.7	47.0	10.6	41.7	47.7	10.3	46.8	42.9	8.1	46.0	45.9
Utah	8.6	47.9	43.5	8.0	49.8	42.2	6.9	47.5	45.6	6.1	50.2	43.7
Vermont	5.7	30.9	63.4	5.8	28.4	65.8	7.5	27.2	65.3	6.7	27.2	66.0
Virginia	11.0	31.4	57.6	9.9	29.9	60.2	9.2	39.9	50.9	7.7	40.0	52.3
Washington	7.6	44.7	47.7	7.8	48.4	43.8	8.4	69.3	22.3	5.4	76.5	18.2
West Virginia	13.0	54.6	32.4	10.9	48.9	40.2	9.7	55.1	35.2	9.6	62.5	27.9
Wisconsin	4.0	28.7	67.3	4.1	35.8	60.1	5.0	33.7	61.3	4.8	36.5	58.7
Wyoming	.5	33.5	56.0	6.9	32.9	60.2	5.9	26.8	67.3	3.0	26.4	70.6

—Not applicable.

SOURCE: National Education Association, *Estimates of School Statistics*, editions for 1973-74, 1976-77, 1981-82, copyrighted, and unpublished revised data for 1981-82.

Chart 1.16

State Share of Public Elementary/Secondary School Revenues



In all but five States, the State government provided a larger share of school revenues in 1981-82 than in 1971-72.

Table 1.17

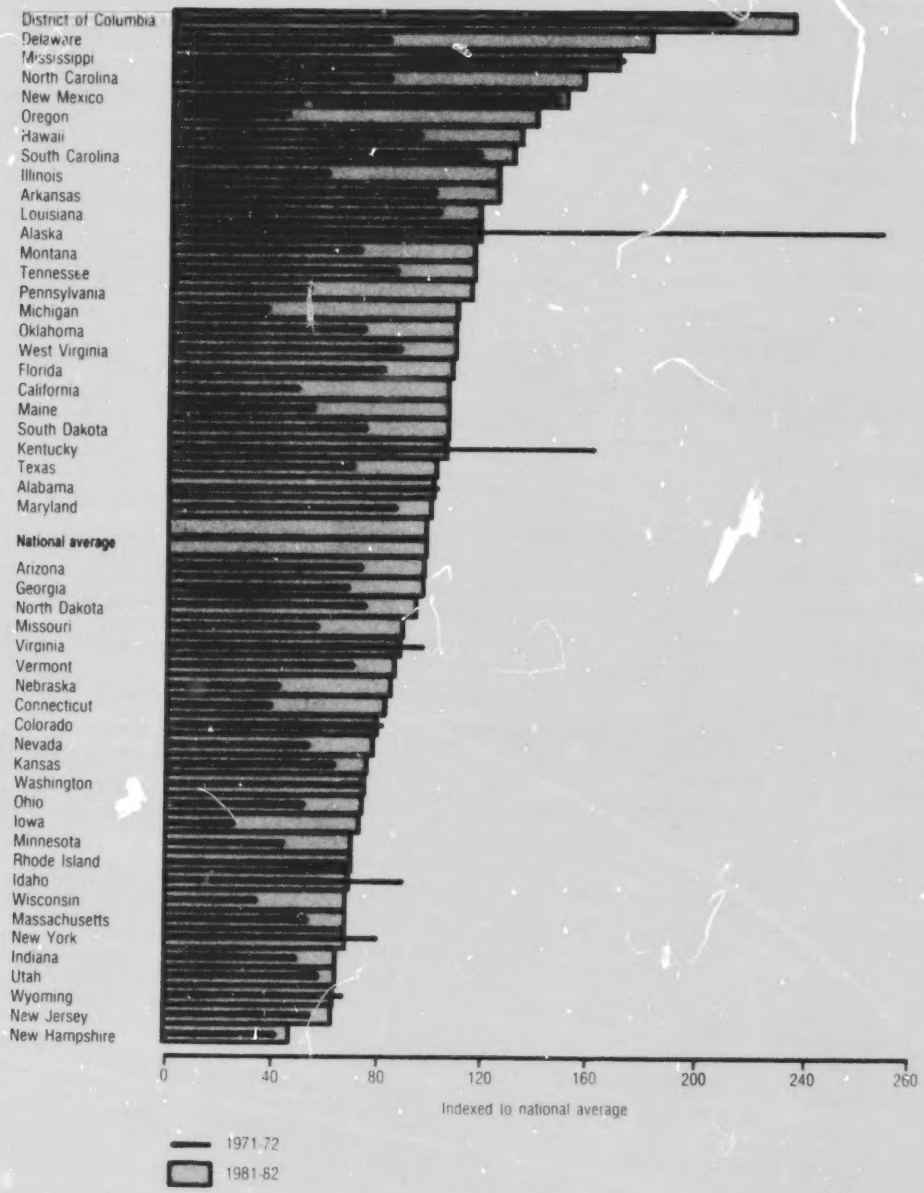
Federal Education Revenues per Pupil, in Current Dollars and Indexed to the National Average: 1971-72 and 1981-82

State	1971-72		1981-82	
	Dollars	Index	Dollars	Index
United States	$112	100	$234	100
Alabama	116	104	242	103
Alaska	301	269	281	120
Arizona	84	75	231	99
Arkansas	117	103	298	127
California	57	51	254	108
Colorado	93	83	189	81
Connecticut	46	41	197	84
Delaware	95	85	431	184
District of Columbia	239	213	550	235
Florida	94	84	258	110
Georgia	79	70	229	98
Hawaii	110	98	318	136
Idaho	102	91	164	70
Illinois	68	61	298	126
Indiana	57	51	153	65
Iowa	30	27	173	74
Kansas	73	65	180	77
Kentucky	183	163	253	108
Louisiana	117	104	280	120
Maine	64	57	253	108
Maryland	99	88	238	102
Massachusetts	61	55	162	69
Michigan	45	40	262	112
Minnesota	51	46	166	71
Mississippi	195	174	400	171
Missouri	65	58	213	91
Montana	83	74	278	118
Nebraska	49	44	202	86
Nevada	62	55	187	80
New Hampshire	47	42	111	47
New Jersey	62	56	147	63
New Mexico	169	150	357	153
New York	91	81	163	69
North Carolina	95	85	372	159
North Dakota	86	77	224	96
Ohio	60	54	175	75
Oklahoma	85	76	261	111
Oregon	52	47	332	142
Pennsylvania	62	55	273	117
Rhode Island	79	71	165	71
South Carolina	136	121	311	133
South Dakota	87	77	253	108
Tennessee	99	89	276	118
Texas	81	73	241	103
Utah	66	59	153	65
Vermont	79	71	203	87
Virginia	110	98	211	90
Washington	86	76	179	76
West Virginia	100	89	259	111
Wisconsin	39	35	162	69
Wyoming	76	67	151	64

SOURCE: National Education Association, *Estimates of School Statistics*, 1973-74 and 1982-83 editions, copyrighted.

Chart 1.17

Federal Education Revenues Per Pupil Indexed to National Average



All but 11 States received more Federal revenues per pupil relative to the national average in 1981-82 than in 1971-72.

Table 1.18

Trends in Expenditures for Public Elementary/Secondary Education, by Purpose: Selected Years, 1970-71 to 1979-80

Purpose of Expenditures	1970-71	1971-72	1973-74	1975-76	1979-80
	In Thousands of Current Dollars				
Total expenditures, all schools	$45,499,862	$48,050,283	$56,970,355	$70,600,573	$95,961,561
Current expenditures, all schools	39,630,460	42,213,093	50,477,845	62,607,754	87,581,727
Public elementary/secondary schools	38,656,967	41,817,782	50,024,638	62,054,105	86,984,142
Administration	1,789,107	1,875,504	2,275,726	2,808,956	4,263,757
Instruction	26,224,359	28,148,306	32,608,652	39,687,404	53,257,937
Plant operation and maintenance	3,960,265	4,324,771	5,291,573	6,675,499	9,744,785
Fixed charges	3,657,396	4,096,404	5,626,662	7,321,317	11,793,934
Other school services	3,025,837	3,372,750	4,222,025	5,560,928	7,923,729
Other programs[1]	973,493	395,319	453,207	553,649	597,585
Capital outlay	4,551,854	4,458,949	4,978,976	6,146,435	6,506,167
Interest on school debt	1,317,548	1,378,236	1,513,534	1,846,384	1,873,666
	In Thousands of Constant (1981-82) Dollars[2]				
Total expenditures, all schools	**$107,362,990**	**$107,153,582**	**$107,640,951**	**$113,808,512**	**$111,726,673**
Current expenditures, all schools	93,513,353	94,136,473	95,373,871	100,924,044	101,970,152
Public elementary/secondary schools	**91,216,266**	**93,254,917**	**94,517,571**	**100,031,559**	**101,274,392**
Administration	4,221,637	4,182,430	4,299,803	4,528,053	4,964,231
Instruction	61,879,871	62,771,572	61,611,452	63,976,314	62,007,455
Plant operation and maintenance	9,344,773	9,644,370	9,998,006	10,760,943	11,345,714
Fixed charges	8,630,113	9,135,104	10,631,130	11,802,003	13,731,508
Other school services	7,139,866	7,521,424	7,977,180	8,964,247	9,225,484
Other programs[1]	2,297,086	881,573	856,298	892,486	695,760
Capital outlay	10,740,706	9,943,591	9,407,379	9,908,087	7,575,038
Interest on school debt	3,108,930	3,073,500	2,859,702	2,976,381	2,181,483
	Percentage Distribution				
Total expenditures, all schools	100.0	100.0	100.0	100.0	100.0
Current expenditures, all schools	87.1	87.9	88.8	88.7	91.3
Public elementary/secondary schools	85.0	87.0	87.8	87.9	90.6
Administration	3.9	3.9	4.0	4.0	4.4
Instruction	57.6	58.6	57.2	56.2	55.5
Plant operation and maintenance	8.7	9.0	9.3	9.5	10.2
Fixed charges	8.0	8.5	9.9	10.4	12.3
Other school services	6.7	7.0	7.4	7.9	8.3
Other Programs[1]	2.1	.8	.8	.7	.6
Capital outlay	10.0	9.3	8.7	8.7	6.8
Interest on school debt	2.9	2.9	2.7	2.6	2.0

[1]Other programs include summer schools and community services. In 1970-71, adult education and community colleges were also included.

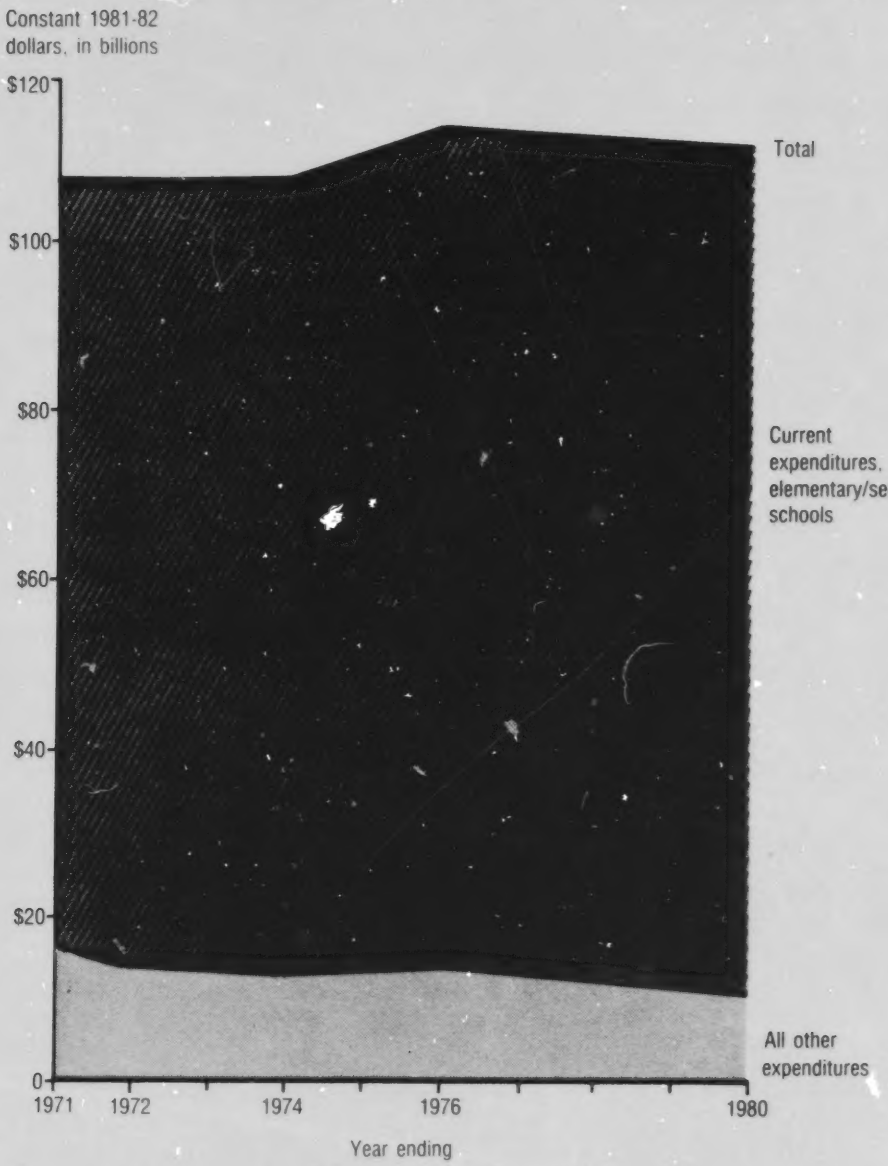
[2]Adjusted for inflation, using the Index of State and Local Governments Purchases.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Expenditures and Revenues for Public Elementary and Secondary Education, 1970-71*, 1973; *Statistics of State School Systems*, various years; and Common Core of Data Survey, unpublished tabulations (June 1983).

Chart 1.18

Expenditures for Public Elementary/Secondary Education



While current expenditures for public elementary/secondary education appeared to have doubled between 1970-71 and 1979-80, most of the rise was attributable to inflation. When adjusted for inflation, expenditures for capital outlay and interest on the school debt decreased substantially over the period.

Table 1.19

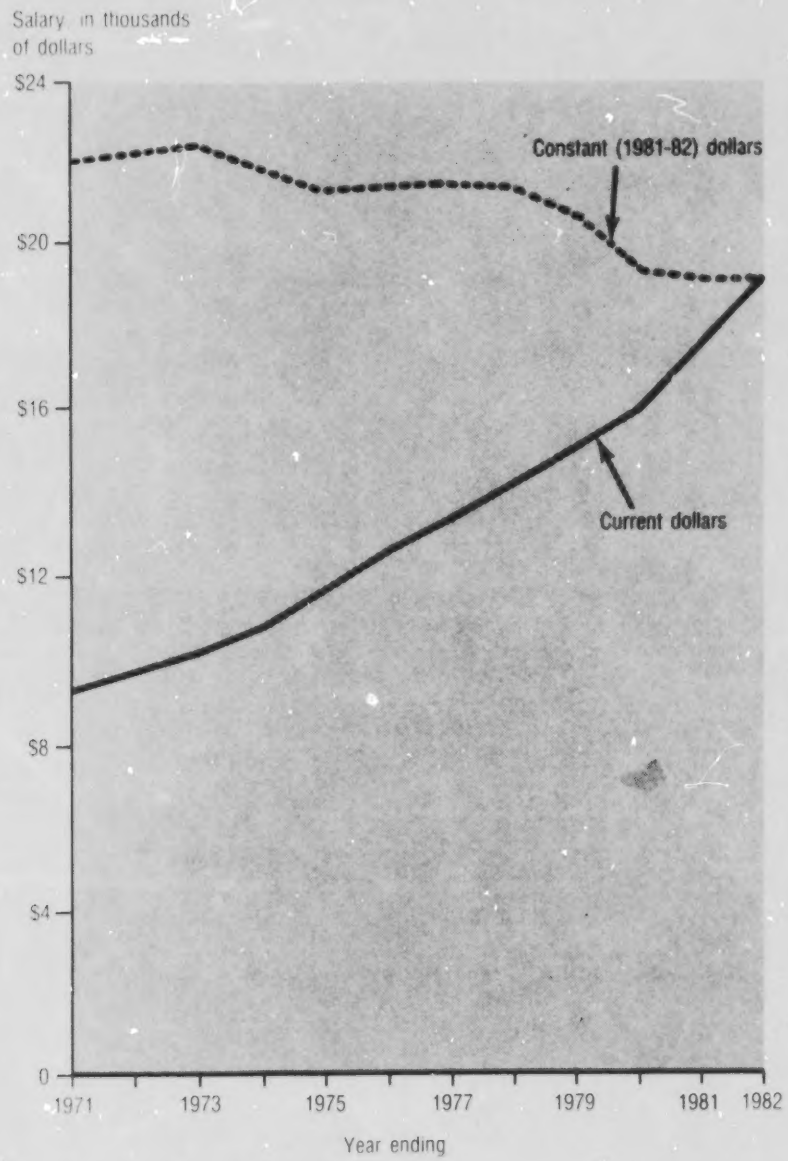
Trends in Current Expenditures for Salaries of Classroom Teachers in Public Elementary/Secondary Schools: 1970-71 to 1981-82

Year	Number of Classroom Teachers, in Thousands	Salaries of Classroom Teachers			
		Average Annual Salary		Total, in Billions	
		Current Dollars	Constant (1981-82) Dollars*	Current Dollars	Constant (1981-82) Dollars*
1970-71	2,055	**$9,269**	**$21,966**	$19.0	$45.0
1971-72	2,063	**9,705**	**22,197**	20.0	45.7
1972-73	2,103	**10,176**	**22,372**	21.4	47.0
1973-74	2,133	**10,778**	**21,770**	23.0	46.4
1974-75	2,166	**11,690**	**21,242**	25.3	46.0
1975-76	2,196	**12,591**	**21,363**	27.6	46.8
1976-77	2,186	**13,352**	**21,414**	29.2	46.8
1977-78	2,209	**14,207**	**21,350**	31.4	47.2
1978-79	2,207	**15,022**	**20,637**	33.1	45.5
1979-80	2,183	**15,951**	**19,339**	34.8	42.2
1980-81	2,162	**17,601**	**19,127**	38.1	41.4
1981-82	2,117	**19,157**	**19,157**	40.6	40.6

*Adjusted for inflation, using the Consumer Price Index.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1990-91*, 1982, and Common Core of Data, unpublished tabulations (November 1983); National Education Association, *Estimates of School Statistics, 1982-83*, 1983, copyrighted, and unpublished tabulations.

Average Annual Salary of Classroom Teachers in Public Elementary/Secondary Schools



When adjusted for inflation, the average salary of public school teachers generally declined throughout the 1970's.

Table 1.20

Average Percentage of Correct Responses by 9-, 13-, and 17-Year-Olds on All Mathematics Exercises, by Selected Student and School Characteristics: 1981-82 and Change from 1977-78

Characteristic	9-Year-Olds		13-Year-Olds		17-Year-Olds	
	Average Percent Correct, 1982	Change from 1978 to 1982, in Percentage Points	Average Percent Correct, 1982	Change from 1978 to 1982, in Percentage Points	Average Percent Correct, 1982	Change from 1978 to 1982, in Percentage Points
National average	56.4	1.0	60.5	*3.8	60.4	−0.1
Racial/ethnic group:						
White	58.8	.7	63.1	*3.2	63.2	−.1
Black	45.2	2.1	48.2	*6.5	43.7	1.3
Hispanic	47.7	1.1	51.9	*6.5	48.5	.9
Achievement quartile:[1]						
Low	34.5	1.9	39.8	*5.6	37.4	.5
Mid-low	51.8	.9	55.5	*4.5	54.6	−.2
Mid-high	63.0	.4	66.5	*3.3	67.1	−.3
High	76.2	.7	80.1	*1.8	82.3	−.6
Percent white in school:						
0 to 59 percent	48.8	2.4	53.6	*8.1	47.5	*4.8
60 to 100 percent	58.6	1.0	62.4	*2.8	62.3	.1
Type of community:						
Rural	52.7	1.5	56.3	*3.7	58.0	−1.0
Urban disadvantaged[2]	45.5	1.1	49.3	*5.8	45.3	1.9
Urban advantaged[3]	66.3	1.3	70.7	*5.6	70.0	−.3

*Indicates statistically significant change in performance between assessments at the .05 level.

[1]Based on mathematics assessment scores, students nationwide were partitioned into four achievement groups of equal size, each group representing 25 percent of the students.

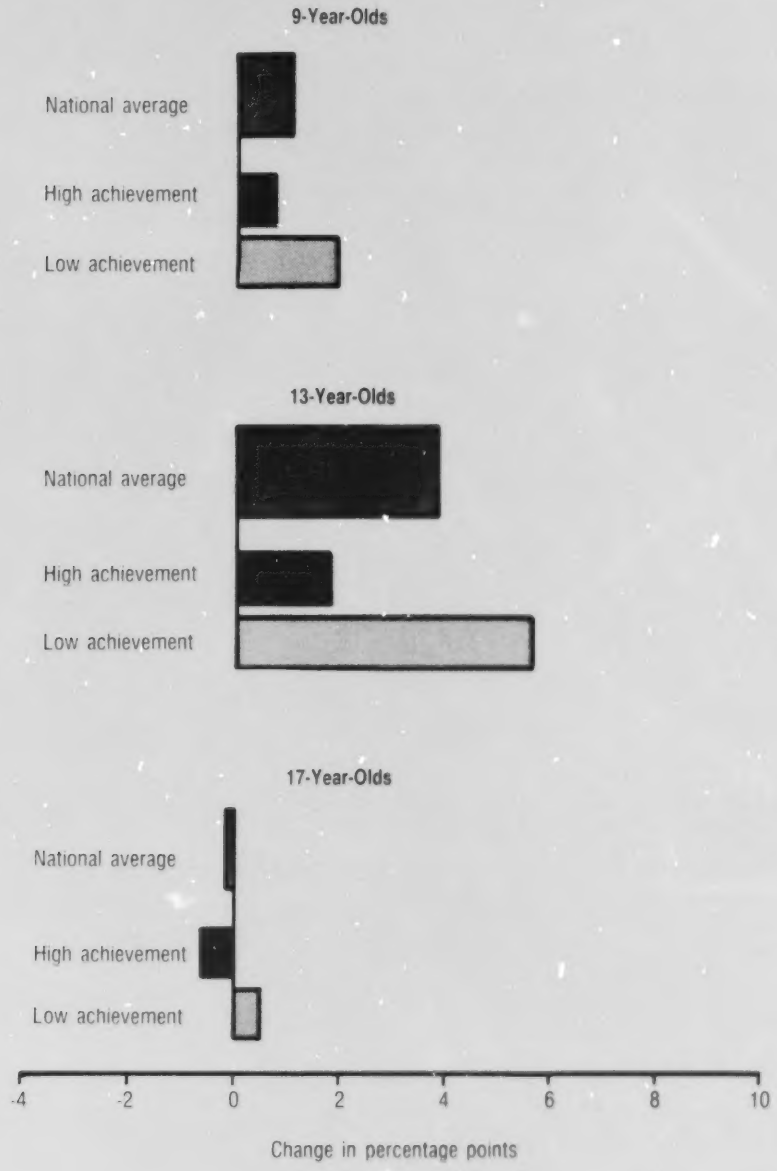
[2]Cities having a population greater than 200,000 where a high proportion of the residents are on welfare or are not regularly employed.

[3]Cities having a population greater than 200,000 where a high proportion of the residents are in professional or managerial positions.

SOURCE: Education Commission of the States, National Assessment of Educational Progress, *The Third National Mathematics Assessment: Results, Trends and Issues*, 1983.

Chart 1.20

Change From 1978 to 1982 in Mathematics Performance of 9-, 13-, and 17-Year-Olds on All Exercises



All groups of 13-year-old students improved in overall mathematics performance, while 9- and 17-year-olds showed few significant changes.

Table 1.21

Average Mathematics Performance of 9-, 13-, and 17-Year Olds on Exercises Assessing Mathematical Knowledge, Skills, Understanding, and Applications, by Race/Ethnicity, Achievement Quartile, and Type of Community: 1981-82 and Change from 1977-78

Characteristic	Knowledge		Skills		Understanding		Applications	
	1982	Change from 1978 to 1982, in Percentage Points	1982	Change from 1978 to 1982, in Percentage Points	1982	Change from 1978 to 1982, in Percentage Points	1982	Change from 1978 to 1982, in Percentage Points
	Average Percent Correct							
9-year-olds, national average	68.3	**1.4**	50.6	**0.8**	41.2	**-0.4**	39.6	**0.5**
Racial/ethnic group								
White	70.8	1.2	53.1	.6	43.4	-.8	42.4	.6
Black	57.8	*3.5	38.7	1.6	31.4	.9	27.0	-.6
Hispanic	58.7	.0	43.8	2.5	32.4	-.2	30.5	.6
Achievement quartile[1]								
Low	44.5	***2.0**	30.1	**2.3**	22.1	**.5**	18.5	**1.0**
Mid-low	65.7	1.6	45.6	.7	33.5	-.9	31.5	.5
Mid-high	76.6	1.2	56.3	-.1	45.0	-1.8	45.4	.7
High	86.4	**.8**	70.6	**.7**	64.1	**.4**	63.1	**.0**
Type of community								
Rural	65.1	2.3	46.5	1.0	35.6	-1.5	37.3	3.2
Urban disadvantaged[2]	56.6	2.1	40.1	1.4	31.7	-1.3	29.6	-1.2
Urban advantaged[3]	77.9	1.2	60.1	.8	53.0	.7	50.0	.9
13-year-olds, national average	73.8	***4.5**	57.6	***4.0**	60.5	***3.9**	45.6	***2.2**
Racial/ethnic group								
White	76.1	*3.9	60.4	*3.4	63.6	*3.6	47.9	*1.6
Black	63.8	*8.0	44.0	*6.7	46.4	*5.9	34.8	*4.4
Hispanic	65.3	*6.3	49.2	*7.2	49.7	*5.9	38.8	*6.0
Achievement quartile[1]								
Low	56.2	***7.6**	34.6	***5.2**	37.7	***5.1**	27.8	***3.9**
Mid-low	71.4	*5.6	51.7	*4.6	54.6	*4.7	39.6	*2.3
Mid-high	79.3	*3.8	64.3	*3.8	67.4	*3.2	50.1	1.5
High	88.4	***1.0**	79.7	***2.3**	82.3	***2.8**	65.0	**1.0**
Type of community								
Rural	70.6	*5.0	53.0	*4.1	54.5	1.9	42.9	2.3
Urban disadvantaged[2]	63.9	*6.9	45.6	*6.3	47.7	*5.1	35.8	3.2
Urban advantaged[3]	81.1	*4.0	69.6	*6.9	72.2	*6.5	54.7	*3.6
17-year-olds, national average	74.9	**.2**	60.0	**.3**	61.5	**-.3**	42.4	**-1.1**
Racial/ethnic group								
White	77.3	.0	63.0	.3	64.7	-.1	45.5	-1.0
Black	62.6	3.0	44.2	1.8	44.8	-.2	26.0	-.2
Hispanic	66.1	2.0	48.4	.5	49.7	.8	31.4	.4
Achievement quartile[1]								
Low	55.7	**1.6**	36.2	**.8**	36.7	**-.3**	21.5	**-.4**
Mid-low	71.7	-.3	54.1	.4	55.5	.1	34.0	-1.3
Mid-high	81.3	-.2	67.2	.3	69.3	-.4	49.7	-1.5
High	90.9	**-.3**	82.3	**-.5**	84.5	**-.8**	67.2	**-1.4**
Type of community								
Rural	72.2	-1.4	57.2	.4	57.1	-.2	38.5	-2.7
Urban disadvantaged[2]	64.7	*3.8	46.4	1.8	47.8	-.3	30.1	1.6
Urban advantaged[3]	82.5	.5	69.7	-.1	72.3	-.3	52.8	-1.4

*Indicates statistically significant change in performance between assessments at the .05 level.

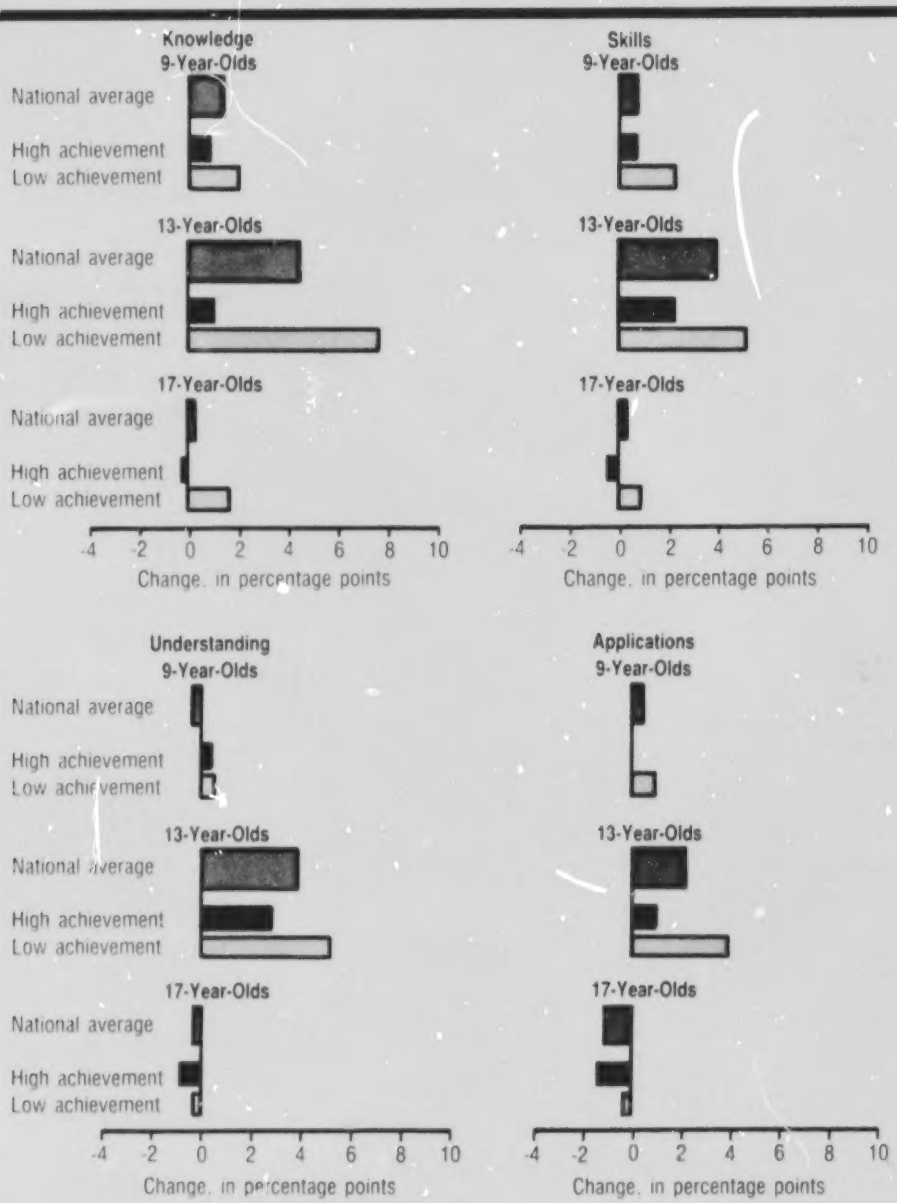
[1]Based on mathematics assessment scores, students nationwide were partitioned into four achievement groups of equal size, each group representing 25 percent of the students.

[2]Cities having a population greater than 200,000 where a high proportion of the residents are on welfare or are not regularly employed.

[3]Cities having a population greater than 200,000 where a high proportion of the residents are in professional or managerial positions.

SOURCE: Education Commission of the States, National Assessment of Educational Progress, *The Third National Mathematics Assessment: Results, Trends and Issues*, 1983.

Change from 1978 to 1982 in Mathematics Performance of 9-, 13-, and 17-Year-Olds on Exercises of Knowledge, Skills, Understanding, and Application



Thirteen-year-old students in the lowest achievement quartile gained significantly at each learning level of mathematics performance between 1978 and 1982. Other age and performance groups showed minimal changes across all learning levels.

Table 1.22

Average Science Performance of 9-, 13-, and 17-Year-Olds in Selected Assessment Areas, by Sex, Race, and Region: 1981-82 and Change from 1976-77

Age Group, Sex, Race, and Region	Assessment Areas: Content		Inquiry		Science, Technology, and Society	
	1982	Change from 1977 to 1982, in Percentage Points	1982	Change from 1977 to 1982, in Percentage Points	1982	Change from 1977 to 1982, in Percentage Points
	Average Percent Correct					
9-year-olds, national average	—	—	52.6	**−1.0**	59.9	***2.8**
Sex						
Male	—	—	52.8	−1.1	60.5	*3.1
Female	—	—	52.5	−.9	59.4	*2.6
Race						
White, male	—	—	55.9	**−1.3**	62.7	***3.0**
Black, male	—	—	40.8	**3.4**	50.7	**4.4**
White, female	—	—	55.3	**−1.7**	61.3	**2.2**
Black, female	—	—	41.4	**1.9**	51.7	**4.3**
Region						
Northeast	—	—	54.9	−1.2	59.8	2.1
Southeast	—	—	50.5	2.0	57.2	2.6
Central	—	—	54.6	−1.5	61.4	3.8
West	—	—	50.6	−2.0	60.6	2.7
13-year-olds, national average	52.4	**−.4**	58.0	**−.6**	57.4	**.6**
Sex						
Male	54.7	.3	58.5	−.4	59.5	.9
Female	50.2	−1.0	57.6	−.8	55.3	.3
Race						
White, male	56.8	**−.2**	60.4	**−.8**	61.5	**.7**
Black, male	44.6	**2.4**	48.8	**.6**	50.1	**1.5**
White, female	52.4	**−1.2**	59.7	**−1.1**	57.4	**.4**
Black, female	40.6	**−.8**	49.3	**.1**	46.8	**−.8**
Region						
Northeast	53.3	−1.7	59.9	−2.0	57.6	−.8
Southeast	49.0	−.6	54.4	−1.3	55.2	.1
Central	54.1	−.3	59.9	−.5	59.0	1.3
West	52.5	.7	57.4	1.7	57.1	1.4
17-year-olds, national average	59.7	***−2.0**	69.6	***−2.6**	67.0	**−.5**
Sex						
Male	62.7	*−2.2	70.2	*−2.6	68.6	−1.4
Female	56.9	*−1.7	69.1	*−2.4	65.4	.3
Race						
White, male	65.6	**−1.7**	72.8	***−2.6**	71.2	**−1.2**
Black, male	47.8	**−1.8**	58.1	**−.1**	55.8	**.3**
White, female	59.3	**−1.6**	71.6	***−2.5**	67.8	**.2**
Black, female	44.4	**−1.3**	56.7	**−1.9**	54.1	**2.0**
Region						
Northeast	60.1	*−4.1	71.1	*−3.6	67.0	−1.6
Southeast	57.3	−.1	66.7	−1.9	64.6	.7
Central	61.9	−.9	71.4	−2.1	68.6	−.6
West	58.7	−2.4	68.2	−2.5	67.0	.1

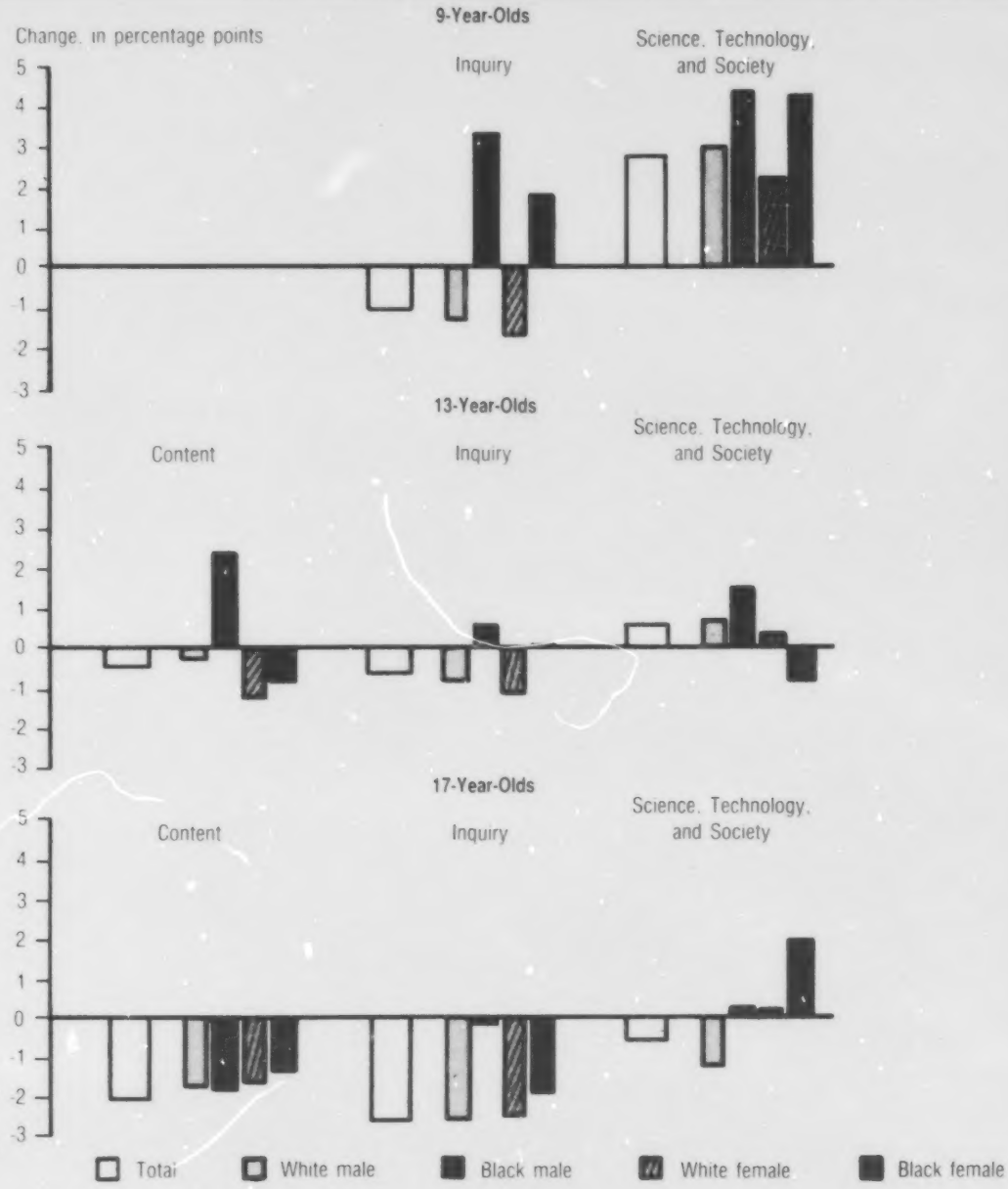
—Not applicable. 9-year-olds were not tested.

*Indicates statistical significance at the .05 level.

NOTE: Results of the Science Assessment Research Project study are shown for three science assessment areas. Comprehensive definitions of these areas may be found in the Data Sources in the Appendix.

SOURCE: University of Minnesota, Minnesota Research and Evaluation Center, *Images of Science*, 1983, copyrighted.

Change from 1977 to 1982 in Average Science Performance of 9-, 13-, and 17-Year-Olds



Students' performance in science between 1977 and 1982 changed minimally or was mixed, depending on the knowledge area and age group assessed.

Table 1.23

Trends in Number of Public and Private High School Graduates and as Percent of 18-Year-Old Population: 1970-71 to 1992-93

Year	Total High School Graduates	As Percent of 18-Year-Old Population	Sex		Control	
			Male	Female	Public	Private (Estimated)
	Numbers in Thousands					
1970-71	2,937	75.7	1,454	1,483	2,637	300
1971-72	3,001	75.5	1,487	1,514	2,699	302
1972-73	3,036	74.9	1,500	1,536	2,730	306
1973-74	3,074	74.9	1,512	1,562	2,763	310
1974-75	3,133	73.6	1,542	1,591	2,823	310
1975-76	3,148	73.8	1,569	1,579	2,837	311
1976-77	3,154	74.1	1,547	1,607	2,840	315
1977-78	3,127	73.6	1,531	1,596	2,825	302
1978-79	3,101	71.8	1,516	1,585	2,801	300
1979-80	3,043	71.5	1,491	1,552	2,748	295
1980-81	3,020	71.3	1,483	1,537	2,725	295
1981-82	3,001	71.7	1,474	1,527	2,711	290
			Projected[1]			
1982-83	2,916	72.6	1,451	1,465	2,626	290
1983-84	2,741	72.6	1,366	1,375	2,469	272
1984-85	2,656	72.6	1,321	1,335	2,393	263
1985-86	2,595	72.6	1,292	1,303	2,338	257
1986-87	2,663	72.6	1,326	1,337	2,399	264
1987-88	2,739	72.6	1,366	1,373	2,467	272
1988-89	2,742	72.6	1,368	1,374	2,450	292
1989-90	2,491	72.6	1,242	1,249	2,244	247
1990-91	2,408	72.6	1,200	1,208	2,169	239
1991-92	2,323	72.6	1,159	1,164	2,093	230
1992-93	2,378	72.6	1,187	1,191	2,142	236

[1] Preliminary

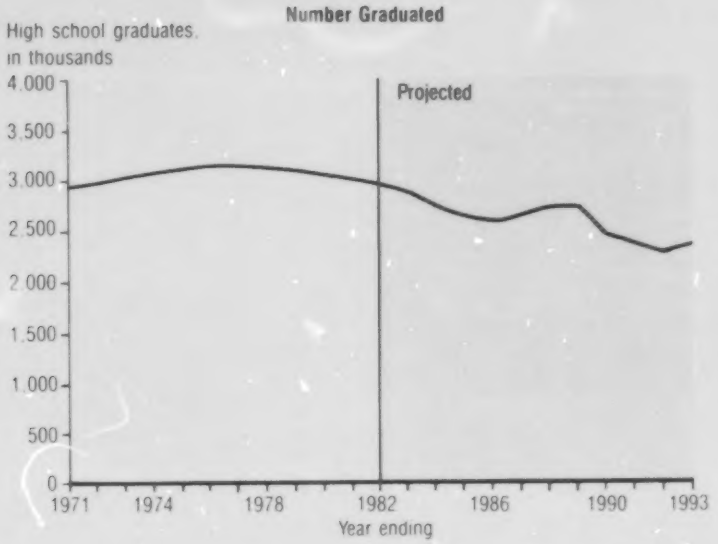
[2] For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming

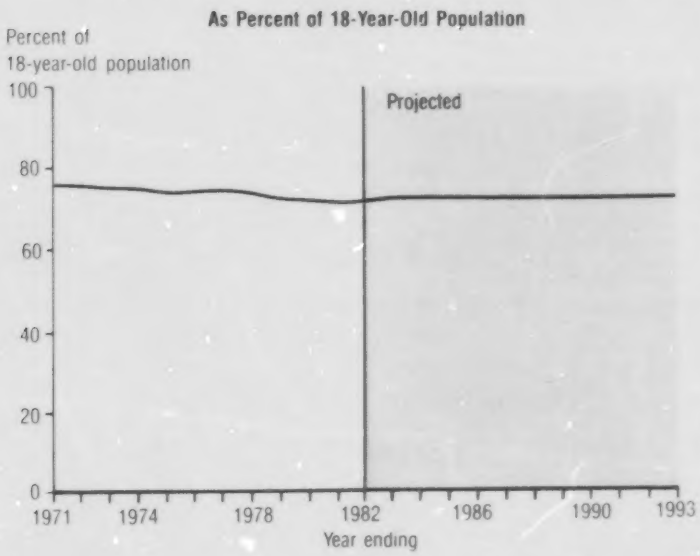
NOTE: Details may not add to totals because of rounding

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools*, various years; *Statistics of Nonpublic Elementary and Secondary Schools*, various years; *Public High School Graduates, 1980-81*, bulletin, 1983; and *Projections of Education Statistics to 1992-93*, forthcoming

Chart 1.23

High School Graduates





With little change projected in the high school graduation rate, schools are expected to graduate fewer students as the size of the high school age group decreases.

Chapter 2
Higher Education

This chapter sketches the changing features of higher education— specifically, enrollment, resources, and degrees conferred. It begins with a quick snapshot of college participation in 1982 to show higher education in relation to all postsecondary instruction. It then profiles trends in enrollment, particularly the increases in female and part-time participation, and shows the effects of recent changes on the various types of institutions of higher education. Trends in staffing resources are described in relation to enrollment change; trends in finance are viewed in light of changing revenue sources and inflation. The chapter concludes with a look at trends in annual degree awards, which reflect the enrollment changes of the recent past.

Enrollment

Higher Education's Share of Postsecondary Education

Estimates of participant counts suggest the role that higher education plays in providing postsecondary education. Higher education enrolled two-thirds of all participants in postsecondary education in October 1982, according to the Bureau of the Census Current Population Survey (entry 2.1). The estimates, derived from the self-reports of household respondents, indicate that more than 12 million participants were enrolled in college out of 18 million postsecondary education participants. Of these more than 12 million college students, 9 million were taking courses for academic credit. In addition, 2 million students were attending college to obtain vocational credit and another 1 million for non-credit. Although higher education, as a primary function, provides academic instruction it also is a leader in vocational education, as these data indicate. According to the Current Population Survey figures, the colleges instructed more students in vocational courses than all other postsecondary providers.

Trends in Enrollment

Significant changes have occurred in higher education enrollment over the past 12 years, according to data collected from universities and colleges by the National Center for Education Statistics. In the first half of the 1970's, it rose rapidly from 8.6 million in 1970 to 11.2 million in 1975, an increase of 30 percent (entry 2.2). After some fluctuations, this number increased to 12.1 million in 1980, an increase of 8 percent over 1975. From 1981 to 1983, college enrollment stabilized at 12.4 million. For the remainder of the 1980's, higher education enrollment is projected to decrease somewhat as declines in the traditional college-age population reduce the pool of potential students. From the record level of 12.4 million in 1982 it is projected to fall to 11.8 million in 1992, a decrease of 5 percent. However, full-time-equivalent enrollment is expected to decline by 10 percent over the next decade,* about half the expected drop in the 18- to 24-year-old population. The increased enrollment of older students is expected to offset about half of the decline in the full-time-equivalent enrollment of traditional-age students (about three-fourths on a headcount basis). Small institutions and colleges in rural areas may, however, have more difficulty attracting older students than large institutions or institutions in metropolitan areas. In addition, schools in areas of out-migration may have larger than average declines in traditional-age students to offset.

Changing Composition of Enrollment

During the past 12 years of enrollment changes, the composition of the students and institutions also changed. Some characteristics that typified the student body at the beginning of the 1970's became less apparent by the end of the decade. For example, while full-time students, young adults, and those in 4-year colleges and universities still comprised the majority of college students in 1982, they represented a smaller share of the total student population than in the previous decade. The only characteristic to remain relatively unchanged was the proportion at the undergraduate level, which stayed about 86 percent.

The expansion of public 2-year institutions had much to do with these changes. Often offering open admissions,

* U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1992-93*, forthcoming

low tuitions, and flexible scheduling, these institutions generally serve the needs of part-time students who combine education with work. The impact of the expansion of public 2-year institutions is apparent in the enrollment data. Between 1970 and 1982, the proportion of all students in 4-year institutions, as opposed to 2-year institutions, declined from 74 percent to 62 percent. The proportion of full-time students showed a similar trend, decreasing from 68 percent to 58 percent during the period. The concomitant rise in public enrollment was less evident, however, increasing from 75 percent to 78 percent of the total enrollment between 1970 and 1982.

Two additional developments over this period were the appreciable growth in the enrollment of women and the decline in the proportion of younger students. At the same time that female enrollment grew, male enrollment remained fairly steady, so that by the end of the 1970's, males were no longer in the majority. Male enrollment as a percent of the total enrollment declined by more than 10 percentage points, from 59 percent in 1970 to 48 percent in 1982. Over the same period, the share of enrollment that students under 25 years old comprised decreased by more than 11 percentage points, from 72 percent in 1970 to 61 percent in 1982.

Just as the composition of higher education enrollment changed between 1970 and 1982, so is it expected to continue changing between 1982 and 1992. The proportion of students in 4-year institutions is expected to decline to 60 percent by 1992, down from 62 percent in 1982. In contrast, the share of public enrollment is expected to rise slowly, from 78 percent of total college enrollment in 1982 to 79 percent in 1992.

When expressed in full-time-equivalencies, undergraduate enrollment is expected to decrease by 12 percent while graduate and first-professional enrollments are projected to increase by 7 and 4 percent, respectively. FTE enrollment in private institutions is expected to decline somewhat more than public institutions (12 percent vs. 10 percent). The decline in FTE enrollment is projected to be somewhat larger in 4-year institutions than in 2-year institutions (11 percent vs. 9 percent).

The proportions of students who are under 25 years old, undergraduate, and full-time are also projected to decline. By 1992, students under 25 years old are projected to comprise just 51 percent of the total enrollment, down from 61 percent in 1982. The proportion who are undergraduate is expected to decline marginally over the same period, from 87 percent to 86 percent. The proportion enrolled full-time is expected to decrease to 52 percent of total college enrollment in 1992, down from 58 percent in 1982.

This decrease in the proportion enrolled full-time is expected for both male and female students over the projection period. The proportion of males enrolled full-time is projected to decline to 57 percent of total male enrollment in 1992, down from 62 percent in 1982 and 70 percent in 1970 (entry 2.3). The proportion of women enrolled full-time, which has traditionally been lower than the proportion among men, is projected to represent less than half (48 percent) of total female enrollment by 1992, down from 54 percent in 1982 and 65 percent in 1970.

Change in Enrollment, by Type of Institution

Changes in enrollment were evident in most types of higher education institutions. Data on enrollment by detailed institutional type, available from 1978 to 1982, show that growth was similar in both public and private institutions, but uneven across the various types of institutions (entry 2.4). Increases were largest at specialized institutions, where instruction is given in a few fields, and at 2-year institutions. Doctoral and comprehensive institutions showed the least change.

The public sector increased enrollments by 10 percent between 1978 and 1982 and enrolled 78 percent of the students in 1982. Of the 9.7 million students in public institutions, 46 percent were in 2-year institutions. As indicated previously, these public 2-year institutions also experienced the largest growth in enrollments between 1978 and 1982. In doctoral, comprehensive, and 2-year institutions, the public sector enrolled more students than the private sector.

Enrollments also increased in the private sector, with the exception of two institutional types: doctoral and general baccalaureate institutions declined slightly from 1980 to 1982. In the private sector, the general baccalaureate college enrolled the most students. For general baccalaureate and specialized colleges, in 1982, enrollments in the private sector exceeded those of the public sector.

While males have represented less than half of the students overall in higher education since 1980, they comprised in 1982 a majority of the student populations in doctoral, specialized, and private comprehensive institutions. Yet, even where males represented a majority, their percent of the total enrollment has declined since 1978, except in public specialized institutions.

In 1982, 71 percent of the private school students and 54 percent of the public school students were enrolled full-time. This lower level of public full-time enrollment is primarily attributable to public 2-year colleges, where only 36 percent of the enrollment was full-time. In contrast, full-time enrollment at private 2-year colleges was 78 percent of the total.

Change in Minority Composition of Enrollment

The racial/ethnic minority share of enrollment remained relatively stable between 1976 and 1982 (entry 2.5). Minority enrollment represented 14 percent of total enrollment in 4-year institutions of higher education in 1982. In 2-year institutions, minority enrollment was higher, at 20 percent. All minorities had greater representation at 2-year institutions than at 4-year institutions. By contrast, non-resident aliens comprised 4 percent of the total enrollment in 4-year institutions and 1 percent in 2-year institutions.

Resources

Trends in Senior Instructional Staff

Higher education faculty (excluding graduate teaching assistants) were estimated to number 721,000 in 1982 (entry 2.6). The number of instructional faculty generally followed enrollment trends, having increased rapidly in the early to mid-1970's and rising at a slower rate through 1982. During the next 10-year period, senior instructional faculty are projected to decrease to 648,000 by 1992, a 10 percent drop as compared with a 5 percent drop in students. This 10 percent decline is the same as that projected for full-time-equivalent enrollment.

Although much of the faculty growth since 1970 has occurred among part-time instructors in public and 2-year institutions, the decrease projected through 1992 is expected to be comparable across the public and private sectors, various types of institutions, and full-time/part-time positions.

Finance

Change in Revenue Sources

Institutions of higher education depend on a combination of public and private sources for their financial support. The mix of revenue sources is largely dependent on the control of the institution—that is, whether it is publicly or privately governed—and, to a lesser extent, on the level of the institution. Public institutions derive their funding primarily from governmental sources, while private institutions rely much more heavily on student sources (entry 2.7).

Of the governmental sources in 1981-82, States contributed the largest share of funds for public institutions and the Federal government provided the most for private institutions. The States funded generally through appropriations, while Federal funding was often provided through contracts and grants. Governmental revenues, as reported by the colleges and universities, exclude aid to higher education through Pell grants and student loans funded by the Federal government and some student assistance programs funded by State governments. These student assistance programs make up an important share of the revenues reported from student sources. Budget figures show that Federal appropriations for postsecondary student aid in the collegiate and noncollegiate sectors rose dramatically from $.5 to $6.3 billion between 1970-71 and 1981-82.

In 1981-82, State revenues comprised 44 percent of all funding for public 4-year institutions and 50 percent for public 2-year institutions, but only 2 percent for all private institutions. The State share of funding for colleges and universities increased from 1970-71 to 1981-82, particularly at public 2-year institutions, where funding shifted appreciably from local to State governmental sources. Again, these institutional accounts underestimate the State share because student aid is reported under student sources.

The Federal share of higher education institutional funding declined from 19 percent in 1970-71 to 13 percent in 1981-82. The decline was particularly evident at public 4-year institutions, which obtained 13 percent of their revenues from the Federal government in 1981-82 compared with 20 percent in 1970-71. The Federal share of revenues for private 4-year institutions also decreased, but remained a larger proportion of total revenues at these institutions than at public 4-year institutions. Two-year institutions received less from the Federal government than did the 4-year institutions in both years, primarily because they generally are not involved in the basic research fields of greatest interest to the Federal government.

Students were the most important funding source for private institutions and the second most important source, after governments, for public institutions of higher education. In 1981-82, students paid about one-third of the total cost for higher education. About two-thirds of the revenues from students derived from tuition charges. Private 4-year institutions obtained 37 percent of their revenues from tuition compared to only 13 percent for public 4-year institutions. Private 2-year institutions relied the most on students for revenues, receiving about two-thirds of their revenues from tuition. Despite substantial increases in tuition charged by institutions of higher education, the proportion of revenues from tuition generally rose only about 1 percentage point from 1970-71 to 1981-82.

Trends in Tuition Charges

Between 1973-74 and 1982-83, undergraduate tuition, room, and board charges rose by 94 percent at public institutions and by 119 percent at private institutions (entry 2.8). For the 1982-83 academic year, annual tuition, room, and board charges averaged $2,944 for students at public institutions and $6,920 for students at private institutions. Most of the large difference in the cost of attending public and private colleges was in the tuition charges.

Besides the variation in charges between public and private institutions, charges by the various levels of institutions also differed widely. Charges at private universities rose 70 percent to $8,537 from 1977-78 to 1982-83. In contrast, the charges at public 2-year institutions were the lowest at $2,390, having increased at the slowest rate, 50 percent, over the period.

Since 1980-81, average tuition, room, and board charges have increased at a faster rate than inflation. The 1980-81 to 1982-83 period may be regarded as "catch-up years," because during the academic years 1977-78 to 1980-81, the increases in college charges were lower than the accelerating inflation rate. After 1980-81, as the inflation rate began to drop, large increases in student charges persisted. In 1981-82, the charges at both public and private institutions rose by some 13 percent over the previous year, while the inflation index dropped to under 9 percent. The inflation rate fell to 4 percent during the 1982-83 academic year, but college charges went up by 10 percent at public institutions and 12 percent at private institutions.

College charges tend to lag behind changes in inflation rates because charges are often fixed months before the academic year begins, and college officials are reluctant to change student charges in mid-year. For example, inflation rates peaked during the 1979-80 academic year, but increases in college charges peaked 2 years later. The growth in average college expenses at public institutions appears to have been restrained by the increasing proportion of students at less expensive 2-year institutions.

Trends in Expenditures

Trends in current funds expenditures by institutions of higher education also reflect the impact of inflation and differing growth rates in the various institutional sectors.

In 1970-71, higher education institutions spent $23.4 billion, which by 1981-82 more than tripled to $70.3 billion (entry 2.9). Expenditures at public institutions generally rose faster than at private institutions. The largest increase in expenditures occurred at public 2-year institutions, nearly quadrupling between 1970-71 and 1981-82. The impact of inflation during this period can be measured by adjusting the expenditures with the Higher Education Price Index, which accounts for price changes in goods and services purchased by higher education institutions. Between 1970-71 and 1981-82, higher education prices increased 126 percent. Besides increases in price levels, increases in enrollments affected higher education expenditures in all types of institutions. Simultaneously controlling for these increases in prices and enrollments reveals that little of the nominal increase in spending translated into real growth in current funds expenditures per full-time-equivalent (FTE) student. Expenditures per FTE student at both public and private institutions generally rose, particularly during the late 1970's, but after 1979-80, expenditures per FTE student began to decline. By 1981-82, expenditures per FTE student were slightly lower than in 1970-71.

Degrees

Changing Composition of Degree Recipients

Trends in degrees awarded generally reflect earlier changes in the numbers of students enrolled, tempered by changes in the composition of enrollment. Nowhere is this more obvious than in the tremendous growth in degrees earned by women. Across all levels, women earned a greater number and an increasing share of degrees between 1970-71 and 1981-82. While the number of degrees awarded to men registered small declines or nominal growth, the number of degrees awarded to women increased appreciably during this period, having risen from levels significantly lower than those of men. As a result, by 1981-82, women earned the majority of bachelor's and master's degrees, one-third of doctor's degrees, and more than one-fourth of first-professional degrees.

In comparison, gains by racial/ethnic minorities in earned degrees received have been relatively small. Minorities received 11 percent of the bachelor's and master's degrees, 8 percent of the doctor's and 9 percent of the first-professional degrees in 1980-81 (entry 2.10). These figures represent slight increases from 1975-76 in the percent of minorities receiving degrees at each level. Additionally, each minority represented a similar percent of the total in the four degree categories.

By contrast, the share of degrees awarded to non-resident aliens varied by degree level in 1980-81. They received 2 percent of the bachelor's, 8 percent of the master's, 13 percent of the doctor's, and 1 percent of the first-professional degrees. The number of non-resident alien degree recipients rose between 1975-76 and 1980-81 for all degree levels except first-professional.

Trends in Bachelor's Degrees

Between 1970-71 and 1981-82, the number of bachelor's degrees awarded increased from 839,700 to 953,000, or 14 percent (entry 2.11). This number is expected to increase still further to 970,000 by 1983-84. Thereafter, a drop to 900,000 is expected by 1992-93, a 6 percent decrease from 1981-82. While the number of bachelor's degrees awarded to men fell slightly between 1970-71 and 1981-82, the number awarded to women rose significantly, registering a 32 percent increase. As a share of all bachelor's degrees, the percent awarded to women rose from 43 percent in 1970-71 to 50 percent in 1981-82. For the remainder of the 1980's, more than half of all bachelor's degrees are projected to be awarded to women.

Approximately 60 percent of 1981-82 bachelor's degrees were granted in six disciplines: business and management, education, social sciences, engineering, health sciences, and the life sciences (entry 2.12). Between 1970-71 and 1981-82, bachelor's degrees increased in business and management (87 percent), engineering (49 percent), health sciences (153 percent), and life sciences (16 percent). Business and management became the largest area of baccalaureate study. Computer and informationsciences degrees also increased appreciably,

from 2,400 in 1970-71 to 29,300 in 1981-82. During the same period, degrees conferred in education and the social sciences decreased 43 percent and 36 percent, respectively. With sizable decreases in elementary education and many education specialties in the 1970's, education dropped from first to second position in the number of baccalaureate degrees awarded.

The majority of the bachelor's degrees in education and the health sciences were awarded to females (entry 2.13). In the other major disciplines of business and management, engineering, life sciences, and social sciences, males predominated. In engineering, only 12 percent of the degrees were awarded to females in 1981-82. Yet, this level represented a significant gain for females from 1970-71, when they earned less than 1 percent of these degrees. The percent of females receiving business and management degrees also increased appreciably during this period from 8 percent to 39 percent.

Trends in Master's Degrees

The number of master's degrees awarded increased rapidly in the 1970's, peaking at 317,200 in 1976-77 (entry 2.14). This number has since declined to 295,500 in 1981-82. It is projected to continue decreasing slowly reaching 285,000 by 1992-93, a 4 percent decline from 1981-82. But again, women represented a steadily increasing share of master's degrees awarded, rising from 40 percent in 1970-71 to 51 percent in 1981-82. This share is projected to increase to 53 percent by 1992-93.

Nearly three-fourths of master's degrees were awarded in six disciplines: education, business and management, public affairs, engineering, health sciences, and social sciences (see entry 2.12). Except for the social sciences, these disciplines awarded more degrees in 1981-82 than in 1970-71. Business and management degrees increased substantially throughout the period, rising from 26,500 in 1970-71 to 61,300 in 1981-82. The number of education degrees awarded at the master's level peaked in 1975-76 but has declined since then. The number awarded in 1981-82 was just 5 percent more than in 1970-71. Nevertheless, education continued to be the largest discipline in terms of master's degrees awarded, comprising 32 percent of the degrees at the master's level. Master's degrees in special education exceeded the number in elementary education in 1981-82, a contrast to their relative numbers in 1970-71.

Among the six disciplines awarding the most degrees, a majority of education, health sciences, and public affairs degrees were awarded to females (see entry 2.13). In business and management, engineering, and the social sciences, most master's degree recipients were males. Nevertheless, the increases in the share of master's degrees received by women in business and management were similar to the trends at the bachelor's level.

Trends in Doctor's Degrees

The number of doctor's degrees changed very little between 1970-71 and 1981-82 and is projected to be relatively unchanged through the 1980's (entry 2.15). But hidden in this overall stability are sharply contrasting trends among male and female recipients. While the number of degrees awarded to men declined by one-fifth between 1970-71 and 1981-82, the number to women rose by 130 percent for the same period. In the 1980's, this trend is expected to continue. This means that the share of doctor's degrees awarded to women which increased from 14 percent in 1970-71 to 32 percent in 1981-82 is expected to reach 48 percent by 1992-93. This rise should offset the expected decline in male recipients, resulting in a fairly stable production of doctoral degrees in the 1980's.

Education, with a 23 percent share of all doctor's degrees, was the largest discipline in terms of doctorates awarded in 1981-82 (see entry 2.12). Life sciences, social sciences, physical sciences, psychology, and engineering followed as disciplines with the most degrees conferred. Together, these six disciplines in 1981-82 represented 71 percent of total doctor's degrees. Between 1970-71 and 1981-82, education, life sciences, and psychology degrees increased in number while engineering, physical sciences, and social sciences degrees decreased. The doubling in the share of doctor's degrees awarded to females from 1970-71 to 1981-82 was true for the larger disciplines as well as for the overall trend (see entry

2.13). However, males in 1981-82 continued to predominate in most disciplines.

Trends in First-Professional Degrees

The number of first-professional degrees awarded increased from 37,900 in 1970-71 to 72,000 in 1981-82, an increase of 90 percent (entry 2.16). The number awarded to women during this period contributed greatly to the total rise. The women's proportion increased from 6 percent in 1970-71 to 28 percent in 1981-82. By 1992-93 this proportion is expected to increase to 34 percent. However, the total number of degrees awarded is projected to decrease to 67,800, a drop of 6 percent from 1981-82.

While males in 1981-82 continued to receive a majority of the first-professional degrees, substantial changes occurred in all disciplines (entry 2.17). The number of total degrees and the proportion awarded to women increased appreciably in the various disciplines between 1970-71 and 1981-82. Representing almost half of the first-professional degrees awarded, law degrees jumped by 107 percent. In 1970-71 only 7 percent of the law degrees were awarded to females; by 1981-82, their share had risen to fully one-third of the total. Medical degrees numbered some 15,800 in 1981-82, an increase of 77 percent from 1970-71. In 1981-82, 25 percent of medical degrees were awarded to females compared with 9 percent in 1970-71. Theology and dentistry were the next largest first-professional disciplines in 1981-82 with 6,900 and 5,300 degrees granted respectively. Degrees in these disciplines grew by 37 and 41 percent, respectively, from 1970-71 to 1981-82. While females received only 15 percent of these in 1981-82, their shares greatly increased from the 1970-71 level of 1 percent in dentistry and 2 percent in theology. For other disciplines, as well, the number of first-professional degrees awarded grew during the 1970's, as did the number of females receiving them.

Table 2.1

Participants in Postsecondary Education,[1] by Type of Provider and Credit Goal: October 1982

Credit Goal[2]	Participants, by Type of Provider		
	All	College	Other Postsecondary Providers
	Number, in Thousands		
Total	18,348	**12,120**	**6,227**
For academic credit—[associate (academic), bachelor's, master's, doctor's, first-professional degrees]	9,247	**9,247**	—
For vocational credit—[associate (occupational) degrees, vocational certificates, diplomas or licenses]	3,468	**2,006**	**1,462**
For non-credit	5,633 [3](6,110)	**868** [3](1,345)	**4,765**
	Percentage Distribution		
Total	**100.0**	**66.1**	**33.9**
For academic credit—[associate (academic), bachelor's, master's, doctor's, first-professional degrees]	100.0	100.0	0
For vocational credit—[associate (occupational) degrees, vocational certificates, diplomas or licenses]	100.0	57.8	42.2
For non-credit	100.0 [3]100.0	15.4 [3]22.0	84.6 78.0

—Not applicable.

[1]Excludes 136,000 participants taking courses for credit towards a high school diploma.

[2]About 106,000 associate degree participants were not asked whether they were enrolled in an academic or vocational program. Therefore, these allocations were made based upon their main reason for taking courses. Of the 106,000 participants, approximately 81,000 indicated they were taking courses to improve job skills or job chances or for training in an occupation in a vocational, trade, technical, business, or commercial school. The remaining 24,000 indicated they were taking courses to improve basic skills, for general education, or for personal development or pleasure and were classified as academic participants.

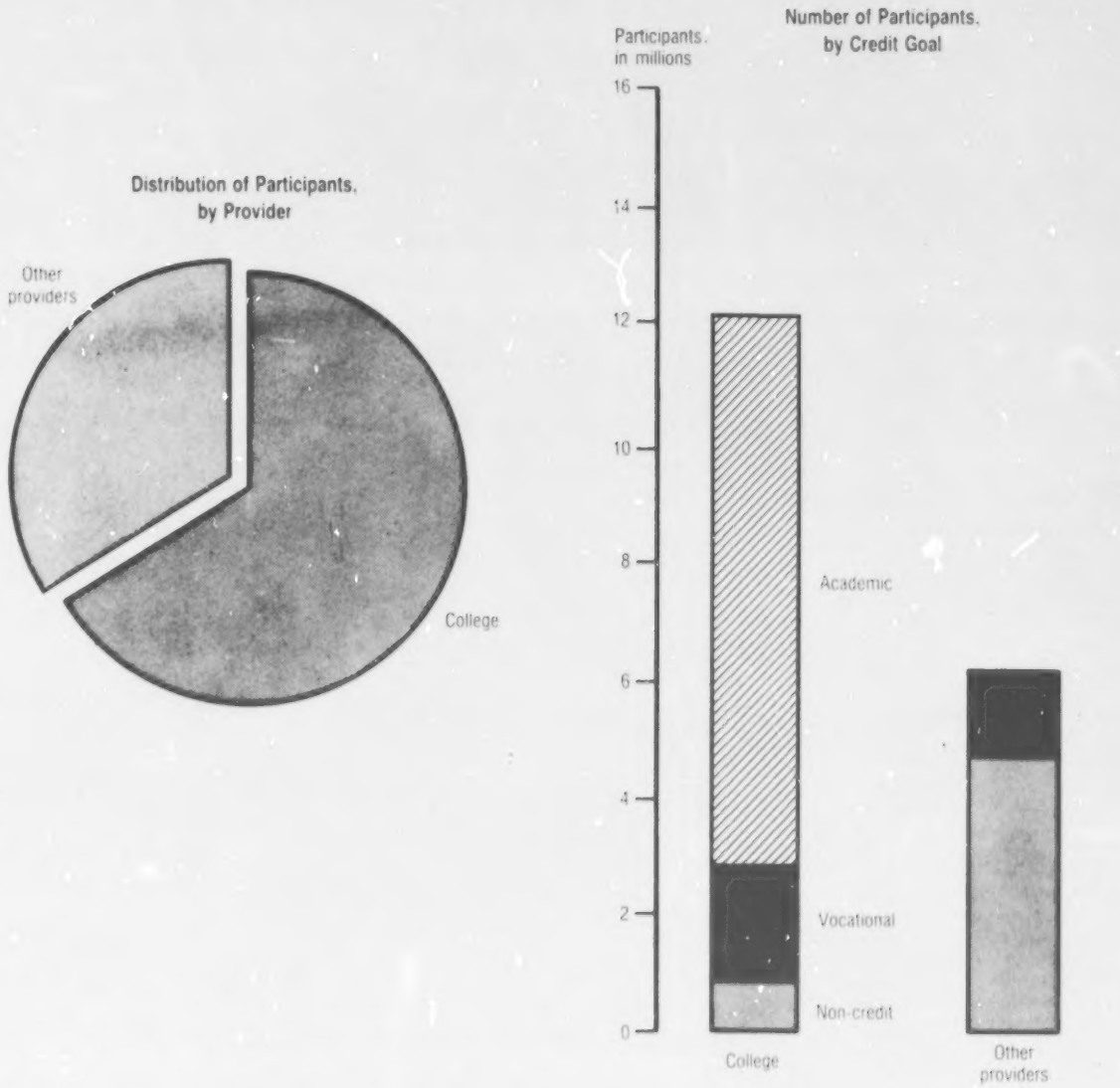
[3]Includes 477,000 participants enrolled in college for an academic degree, vocational certificate, or non-credit who were also taking other courses as in vocational and adult education.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1982, unpublished tabulations (September 1983).

Chart 2.1

Participants in Postsecondary Education, by Type of Provider and Credit Goal



Some two-thirds of all postsecondary education participants were enrolled in college in 1982, mainly, but not exclusively, for academic credit. Even among participants earning vocational credit, more than half were receiving their training at college.

Table 2.2

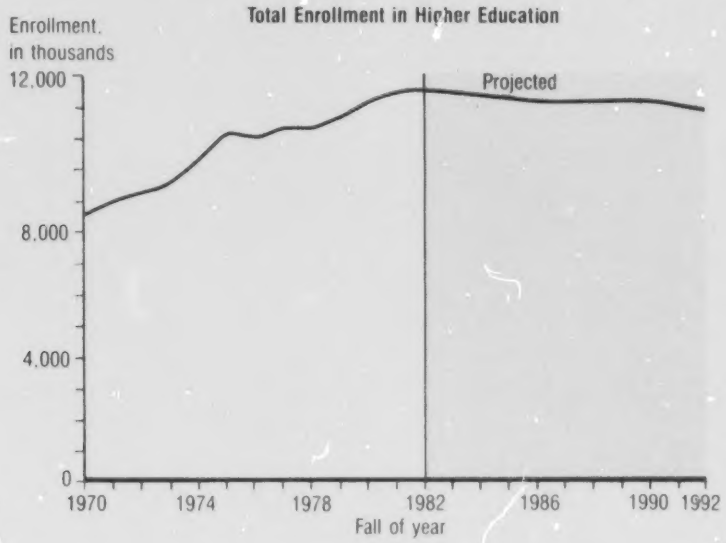
Trends in Total Enrollment in Institutions of Higher Education, by Student and Institutional Characteristics: Fall 1970 to Fall 1992

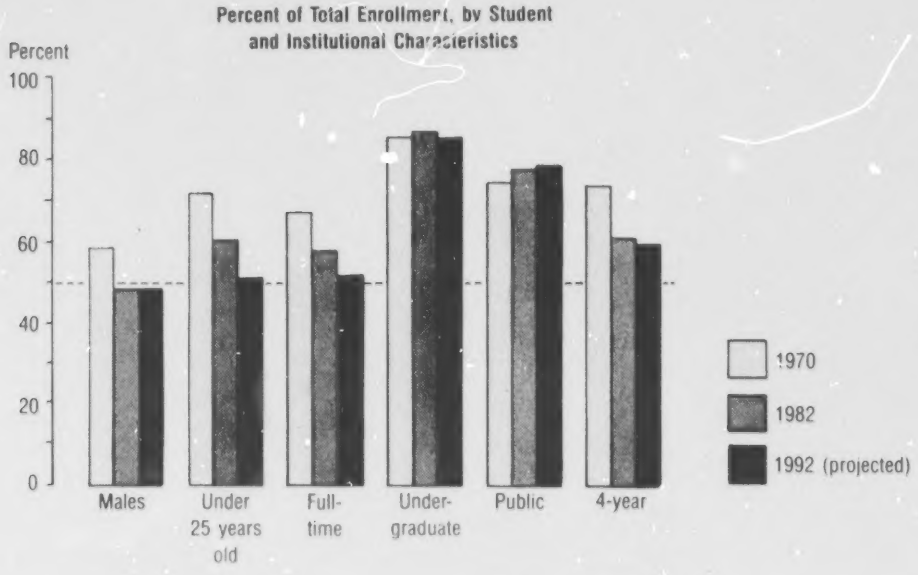
Fall of Year	Total Enrollment, in Thousands	Percent of Total Enrollment					
		Male Students	Students Under 25 Years Old (Estimated)	Full-Time Students	Under-Graduate and Unclassified Students	Students in Public Institutions	Students in 4-Year Institutions
1970	**8,581**	**58.8**	**72.2**	**67.8**	**86.0**	**74.9**	**74.1**
1971	**8,949**	58.2	71.5	67.9	86.5	76.0	72.2
1972	**9,215**	56.9	69.5	65.9	86.2	76.7	70.1
1973	**9,602**	55.9	67.8	64.5	86.0	77.3	68.6
1974	**10,224**	55.0	64.9	62.3	86.1	78.1	66.7
1975	**11,185**	55.0	63.1	61.2	86.5	79.0	64.5
1976	**11,012**	52.8	64.1	61.0	85.6	78.6	64.7
1977	**11,286**	51.3	62.0	60.2	86.0	78.4	64.2
1978	**11,260**	50.1	62.5	59.2	86.0	78.0	64.2
1979	**11,570**	49.1	61.5	58.7	86.4	78.1	63.6
1980	**12,097**	48.6	62.5	58.7	86.6	78.2	62.6
1981	**12,372**	48.3	61.0	58.0	86.9	78.0	61.9
1982	**12,426**	**48.5**	**61.0**	**58.1**	**87.1**	**78.0**	**61.6**
				Projected*			
1983	**12,377**	49.1	59.4	57.1	86.7	78.5	61.0
1984	**12,325**	49.0	58.1	56.3	86.4	78.5	60.9
1985	**12,247**	49.0	56.7	55.4	86.2	78.6	60.7
1986	**12,162**	48.9	55.4	54.6	85.9	78.6	60.5
1987	**12,136**	48.8	54.4	54.1	85.8	78.7	60.3
1988	**12,141**	48.7	53.8	53.9	85.8	78.7	60.2
1989	**12,161**	48.6	53.3	53.6	85.8	78.8	60.1
1990	**12,093**	48.5	52.5	53.2	85.8	78.8	60.1
1991	**11,989**	48.4	51.8	52.6	85.6	78.8	60.0
1992	**11,810**	**48.4**	**51.3**	**52.1**	**85.5**	**78.9**	**59.9**

*For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey, Opening Fall Enrollment, various years; and *Projections of Education Statistics to 1992-93*, forthcoming.

Enrollment Trends in Institutions of Higher Education, by Student and Institutional Characteristics





In contrast to its expansion in the 1970's, higher education enrollment is projected to register some small declines throughout the 1980's and into the 1990's. The proportions of males, younger adults, and full-time students are expected to continue dropping.

Table 2.3

Trends in Total Enrollment in Institutions of Higher Education, by Sex, Age Group, and Full-Time Attendance Status: Selected Years, Fall 1970 to Fall 1992

Sex and Age Group	Estimated Enrollment								Projected Enrollment*			
	1970		1972		1977		1982		1987		1992	
	Total, in Thousands	Percent Full-Time	Total, in Thousands	Percent Full-Time	Total, in Thousands	Percent Full-Time	Total, in Thousands	Percent Full-Time	Total, in Thousands	Percent Full-Time	Total, in Thousands	Percent Full-Time
Both sexes	8,581	67.8	9,215	65.9	11,286	60.2	12,426	58.1	12,136	54.1	11,810	52.1
14 to 17 years	258	93.4	278	94.6	254	87.0	233	90.1	214	89.7	186	89.2
18 and 19 years	2,599	92.5	2,568	92.4	2,705	88.3	2,726	87.5	2,372	88.4	2,133	88.4
20 and 21 years	1,880	87.6	2,054	86.6	2,270	85.0	2,540	82.1	2,078	82.8	2,010	82.8
22 to 24 years	1,457	60.5	1,501	60.0	1,764	59.9	2,081	59.0	1,939	59.9	1,735	60.0
25 to 29 years	1,075	37.9	1,330	35.9	1,844	38.5	1,995	38.5	2,117	36.4	1,933	36.4
30 to 34 years	487	20.5	586	26.8	1,038	24.5	1,262	23.7	1,432	23.0	1,526	23.1
35 years and over	824	16.3	898	13.7	1,411	16.6	1,589	15.6	1,984	14.9	2,289	14.9
Male	**5,044**	**69.5**	**5,239**	**67.9**	**5,789**	**63.1**	**6,031**	**62.2**	**5,918**	**58.4**	**5,715**	**56.6**
14 to 17 years	129	96.1	132	97.7	106	84.0	107	85.0	92	87.0	80	86.3
18 and 19 years	1,349	93.8	1,307	93.0	1,315	89.5	1,295	89.8	1,138	89.2	1,026	89.5
20 and 21 years	1,095	90.4	1,129	88.3	1,211	85.6	1,287	83.9	1,061	84.6	1,029	84.7
22 to 24 years	964	67.4	1,003	68.1	1,015	65.1	1,138	62.8	1,086	65.2	972	65.2
25 to 29 years	783	41.8	898	41.8	1,052	43.3	1,055	42.3	1,152	40.4	1,057	40.3
30 to 34 years	308	23.4	359	28.7	534	27.3	559	31.1	663	27.5	711	27.4
35 years and over	415	18.1	411	13.4	556	15.1	590	14.2	724	14.8	838	14.7
Female	**3,537**	**65.3**	**3,976**	**63.2**	**5,497**	**57.2**	**6,394**	**54.2**	**6,218**	**50.0**	**6,095**	**47.8**
14 to 17 years	129	90.7	145	92.4	147	89.1	126	94.4	122	91.0	105	91.4
18 and 19 years	1,250	91.2	1,261	92.1	1,393	86.9	1,432	85.5	1,234	87.6	1,108	87.5
20 and 21 years	785	83.7	923	84.6	1,060	84.2	1,253	80.2	1,016	81.0	980	80.9
22 to 24 years	493	46.9	500	43.2	749	52.7	943	54.2	852	53.3	762	53.3
25 to 29 years	292	27.4	431	23.7	792	32.1	939	34.2	965	31.6	876	31.6
30 to 34 years	179	15.6	227	23.3	503	21.5	703	17.8	769	19.1	815	19.1
35 years and over	409	14.4	487	13.8	854	17.6	998	16.3	1,260	14.9	1,449	14.9

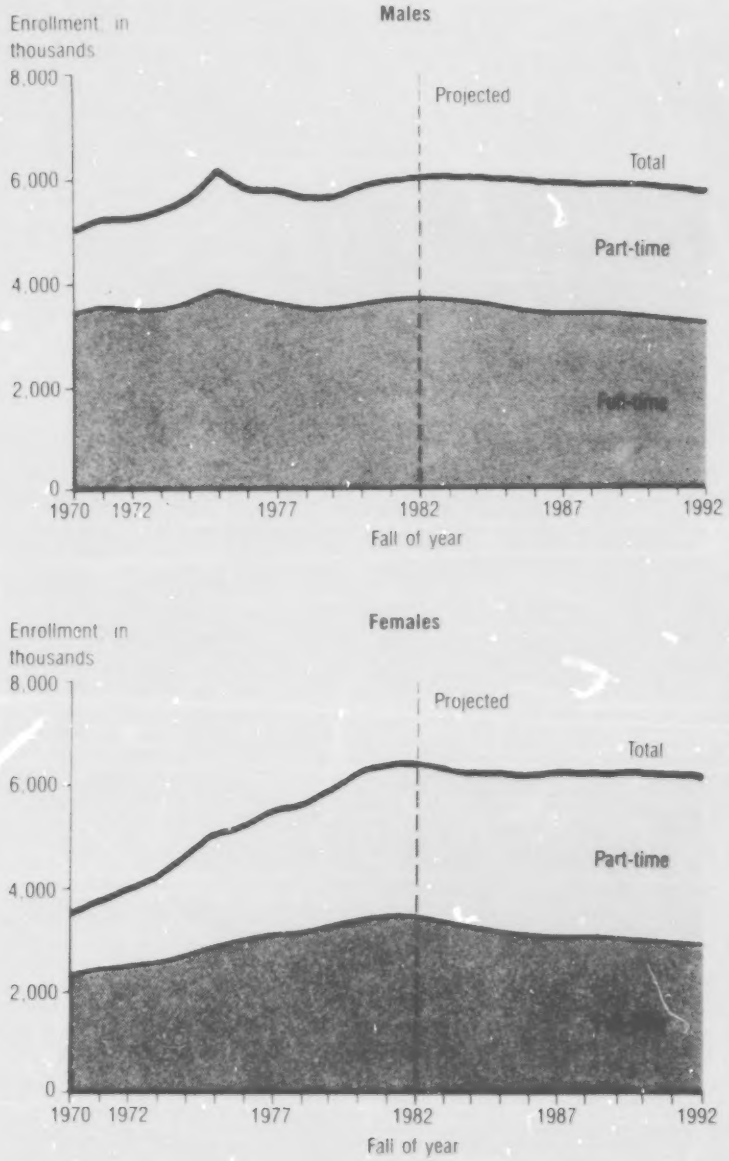
*For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey, Opening Fall Enrollment, various years, and *Projections of Education Statistics to 1992-93*, forthcoming.

Chart 2.3

Anticipated Enrollment Patterns in Higher Education



Continuing a trend from the 1970's, decreasing proportions of both male and female students are expected to attend college full-time. By 1992, less than half of female students are projected to be full-time enrollees, down from 65 percent in 1970.

Table 2.4

Trends in Total Enrollment in Institutions of Higher Education, by Control and New Institutional Classification: Fall 1978 to Fall 1982

Control and Type of Institution	1978	1980	1982	1978	1980	1982
	Number, in Thousands			Indexed to 1978 (1978 = 100.0)		
Total, all institutions	11,260	12,097	12,426	100.0	107.4	110.4
Doctoral	2,902	3,029	3,028	100.0	104.4	104.3
Comprehensive	2,721	2,814	2,838	100.0	103.4	104.3
General baccalaureate	1,103	1,173	1,181	100.0	106.3	107.1
Specialized	483	543	575	100.0	112.4	119.0
2-year	4,051	4,472	4,666	100.0	110.4	115.2
New	1	66	137	100.0	—	—
Public	8,786	9,457	9,696	100.0	107.6	110.4
Doctoral	2,262	2,364	**2,366**	100.0	104.5	104.6
Comprehensive	2,133	2,208	**2,225**	100.0	103.5	104.3
General baccalaureate	370	395	**410**	100.0	106.8	110.8
Specialized	139	180	**193**	100.0	129.5	138.8
2-year	3,881	4,284	**4,464**	100.0	110.4	115.0
New	0	27	**37**	100.0	—	—
Private	2,474	2,640	2,730	100.0	106.7	110.3
Doctoral	639	665	**662**	100.0	104.1	103.6
Comprehensive	588	606	**613**	100.0	103.1	104.3
General baccalaureate	733	777	**771**	100.0	106.0	105.2
Specialized	344	363	**382**	100.0	105.5	111.0
2-year	169	188	**202**	100.0	111.2	119.5
New	1	39	**100**	100.0	—	—
	Male Students as Percent of Total			Full-Time Students as Percent of Total		
Total	50.1	48.6	48.5	59.2	58.7	58.1
Public	49.3	47.8	47.8	55.5	54.8	54.5
Doctoral	53.8	52.6	**52.5**	76.1	76.3	**76.2**
Comprehensive	47.8	46.7	**47.0**	64.1	64.5	**64.8**
General baccalaureate	48.6	47.2	**47.5**	62.6	60.8	**60.4**
Specialized	65.5	68.3	**68.1**	80.3	83.0	**83.6**
2-year	47.0	45.0	**44.8**	37.1	36.5	**36.2**
New	—	48.0	**49.0**	—	24.2	**32.6**
Private	52.9	51.2	51.2	72.5	72.5	70.9
Doctoral	58.0	56.6	**55.8**	71.7	71.4	**72.5**
Comprehensive	53.8	51.7	**51.0**	64.1	64.7	**64.0**
General baccalaureate	45.9	44.4	**44.2**	79.9	78.4	**76.7**
Specialized	62.1	59.6	**58.1**	70.2	69.3	**66.9**
2-year	42.5	39.0	**39.6**	76.6	78.2	**78.0**
New	74.2	68.6	**73.8**	90.5	88.1	**59.6**

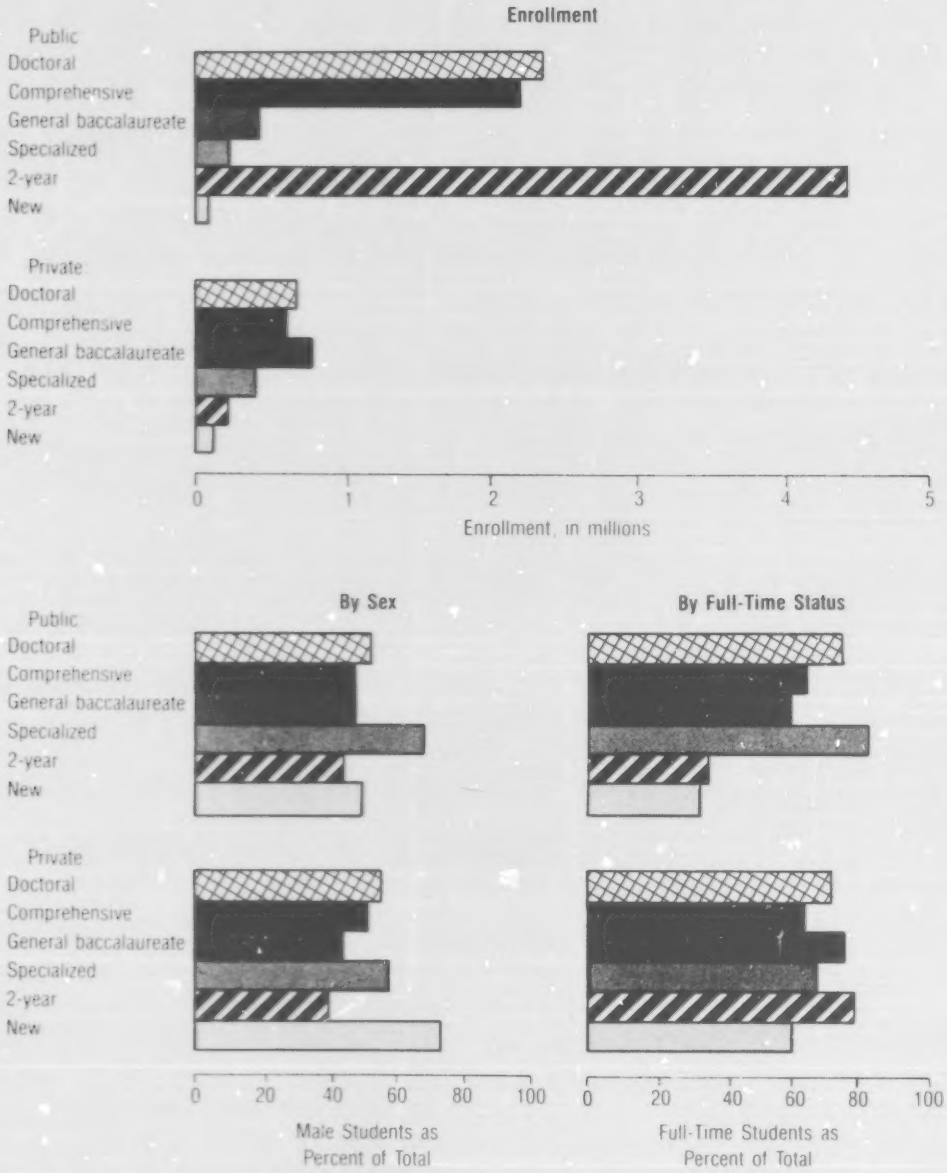
— Not applicable.

NOTE: See the Definitions of Selected Terms in the Appendix for the new institutional classification.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey, Opening Fall Enrollment, unpublished tabulations (October 1983).

Chart 2.4

Total Enrollment in Higher Education, by Control and Classification of Institution: Fall 1982



Two-year institutions enrolled the largest number of students in the public sector, and general baccalaureate colleges enrolled the largest number in the private sector. In the fall of 1982, males represented the majority of students only at doctoral and specialized institutions and at private comprehensive and new institutions.

Table 2.5

Trends in Total Enrollment in Institutions of Higher Education, by Level of Institution and Race/Ethnicity: Fall 1976 to Fall 1982

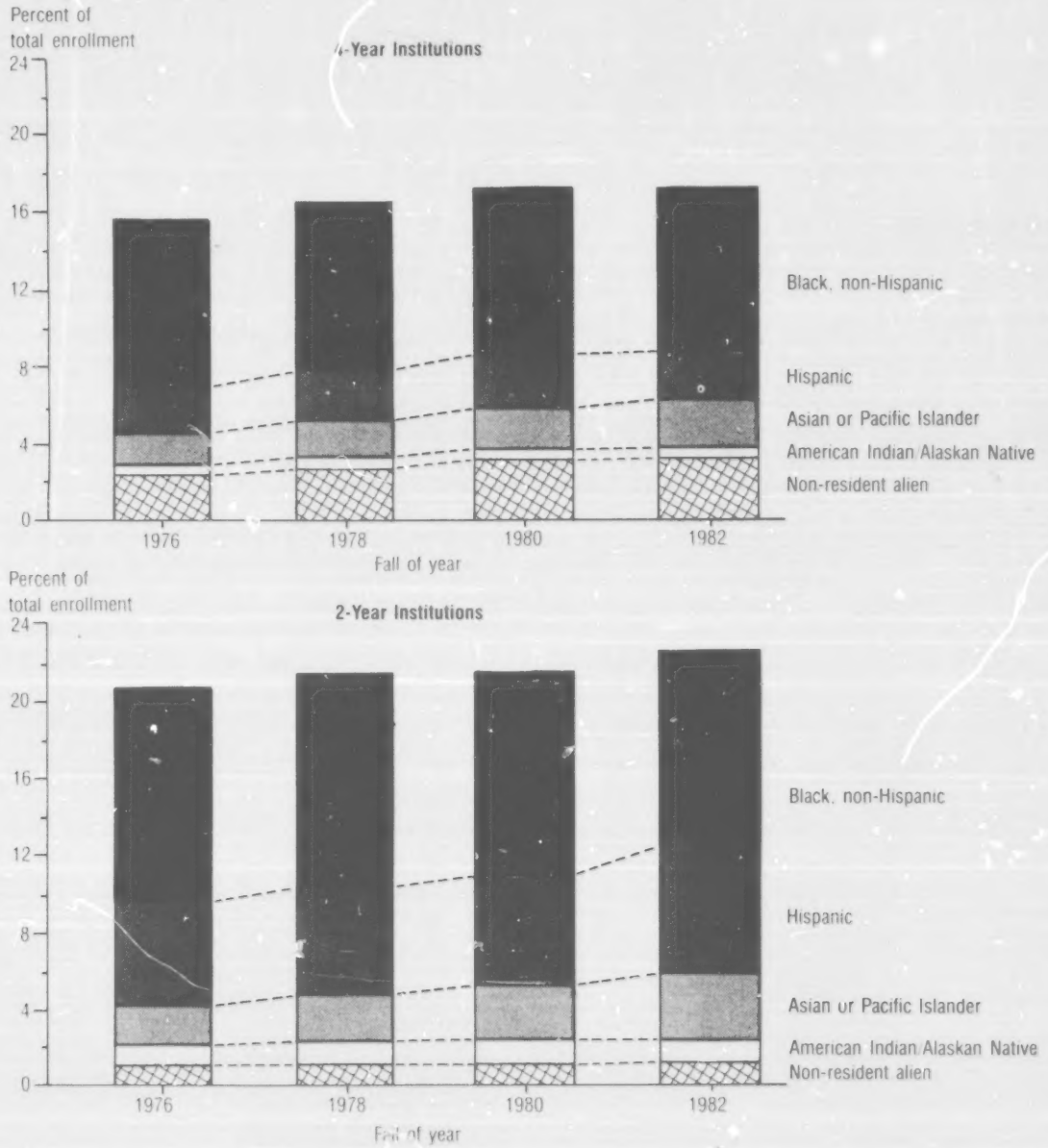
Level and Race/Ethnicity	1976	1978	1980	1982	1976	1978	1980	1982
	Number, in Thousands				Percentage Distribution			
4-year institutions	7,090	7,187	7,548	7,629	100.0	100.0	100.0	100.0
White, non-Hispanic	5,984	6,013	6,259	6,289	84.4	83.7	82.9	82.4
Total minority	930	973	1,048	1,070	**13.1**	**13.5**	**13.9**	**14.0**
Black, non-Hispanic	603	611	633	611	**8.5**	**8.5**	**8.4**	**8.0**
Hispanic	173	190	216	228	**2.4**	**2.6**	**2.9**	**3.0**
Asian or Pacific Islander	118	137	162	193	**1.7**	**1.9**	**2.1**	**2.5**
American Indian Alaskan Native	35	35	37	38	**.5**	**.5**	**.5**	**.5**
Non-resident alien	176	200	241	269	**2.5**	**2.8**	**3.2**	**3.5**
2-year institutions	3,880	4,028	4,490	4,699	100.0	100.0	100.0	100.0
White, non-Hispanic	3,077	3,167	3,532	3,657	79.3	78.6	78.7	77.8
Total minority	761	810	894	981	**19.6**	**20.1**	**19.9**	**20.9**
Black, non-Hispanic	429	443	468	483	**11.1**	**11.0**	**10.4**	**10.3**
Hispanic	210	227	255	291	**5.4**	**5.6**	**5.7**	**6.2**
Asian or Pacific Islander	79	97	124	158	**2.0**	**2.4**	**2.8**	**3.4**
American Indian Alaskan Native	41	43	47	49	**1.1**	**1.1**	**1.0**	**1.0**
Non-resident alien	42	52	64	61	**1.1**	**1.3**	**1.4**	**1.3**

NOTE: Excludes enrollment in U.S. Service Schools that are included in tabulations presented elsewhere in this publication. Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, Office for Civil Rights, unpublished tabulations (December 1983) and National Center for Education Statistics, Opening Fall Enrollment, Fall 1982, unpublished tabulations (December 1983).

Chart 2.5

Minority and Non-Resident Alien Representation in Total Higher Education Enrollment



Minorities represented about 14 percent of enrollment at 4-year institutions and about 20 percent at 2-year institutions in the fall of 1982, proportions essentially unchanged from 1976. Non-resident aliens made up 4 and 1 percent of students at 4- and 2-year institutions, respectively.

Table 2.6

Trends in Full-Time and Part-Time Senior Instructional Staff[1] in Institutions of Higher Education, by Control and Type of Institution: 1970-71 to 1992-93

(In Thousands)

Fall of Year	Total	Employment Status		Control		Type	
		Full-Time	Part-Time	Public	Private	4-Year	2-Year
1970	**474**	369	104	314	160	382	92
1971	**492**	379	113	333	159	387	105
1972	**500**	380	120	343	157	384	116
1973	**527**	389	138	365	162	401	126
1974	**567**	406	161	397	170	427	140
1975	**628**	440	188	443	185	467	161
1976	**633**	434	199	450	183	467	166
1977	**656**	445	211	468	188	483	173
1978	**656**	441	215	467	189	485	171
1979	**675**	445	230	488	187	494	182
1980[2]	**696**	458	238	502	193	506	190
1981[2]	**716**	470	246	518	198	513	202
1982[2]	**721**	472	249	523	198	513	208
			Projected[3]				
1983	**711**	465	246	516	195	507	204
1984	**703**	460	243	510	192	501	202
1985	**694**	454	240	504	190	494	200
1986	**684**	447	237	497	187	485	198
1987	**678**	443	235	493	185	480	198
1988	**677**	442	235	493	184	478	199
1989	**677**	442	235	493	184	478	199
1990	**670**	437	233	488	182	473	197
1991	**661**	431	230	481	180	467	194
1992	**648**	423	225	472	176	457	191

[1]Faculty members with the title of professor, associate professor, assistant professor, instructor, lecturer, assisting professor, adjunct professor, or interim professor (or its equivalent). Excluded are graduate students with titles such as graduate or teaching fellow who assist senior staff.

[2]Estimated on the basis of enrollment.

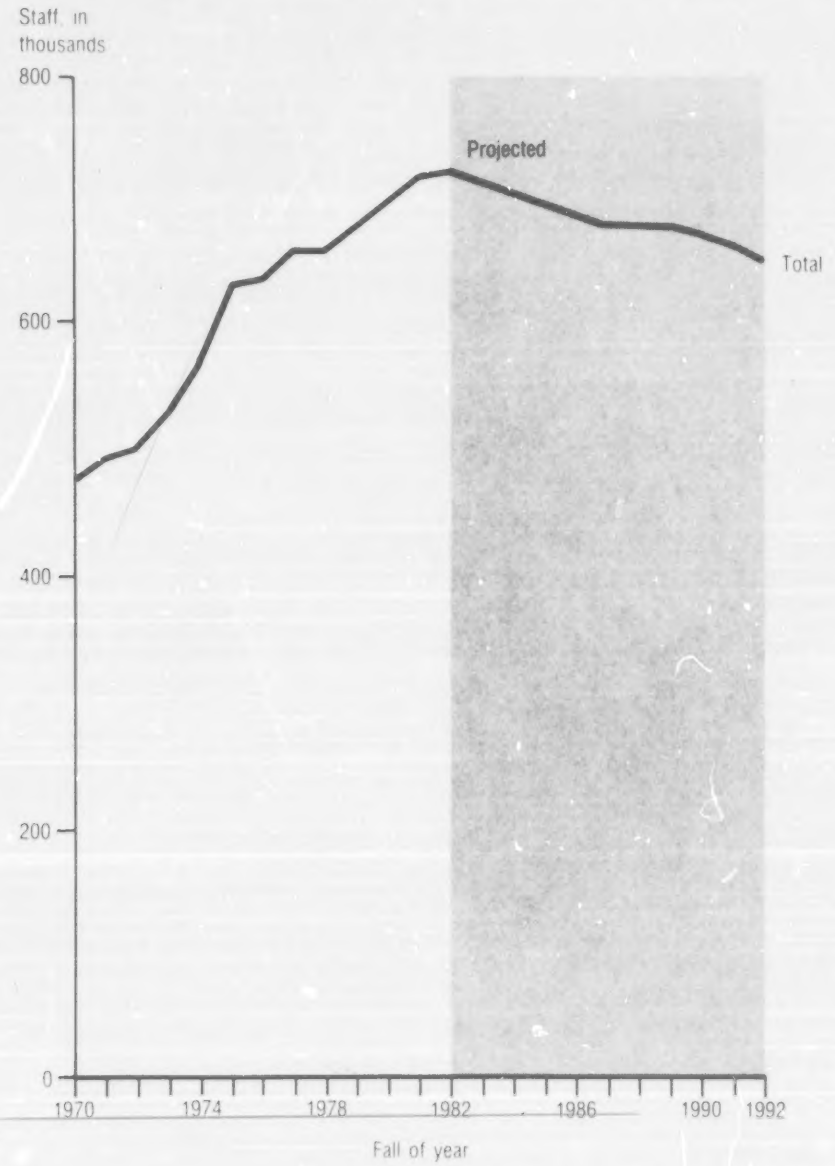
[3]For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Employees in Institutions of Higher Education*, various years; *Projections of Education Statistics to 1992-93*, forthcoming; and Equal Employment Opportunity Commission, Survey of Staff in Institutions of Higher Education, unpublished NCES tabulations (December 1983).

Chart 2.6

Senior Instructional Staff in Institutions of Higher Education



The number of instructional staff in institutions of higher education is expected to decline somewhat into the 1990's, reflecting the anticipated decrease in enrollment.

Table 2.7

Sources of Current Funds Revenues for Institutions of Higher Education, by Control and Level of Institution: 1970-71 and 1981-82

Year and Source	Total	Public Institutions		Private Institutions	
		4-Year	2-Year	4-Year	2-Year
	Amount, in Millions of Dollars				
1970-71:					
Total	$23,879	$13,260	$2,266	$8,115	$237
Government[1]	12,106	8,291	1,778	2,020	16
Federal[2]	4,601	2,616	153	1,819	13
State	6,595	5,528	924	140	3
Local	910	147	701	61	1
Private sources	1,227	348	11	838	31
Students	8,146	3,485	437	4,043	181
Tuition and fees	5,021	3,738	295	2,871	118
Auxiliary enterprises[3]	3,125	1,748	143	1,173	62
Institutional[4]	2,401	1,136	41	1,215	9
1981-82:					
Total	72,191	38,715	8,556	24,181	739
Government[1]	33,378	22,302	6,225	4,802	49
Federal[2]	9,592	4,882	491	4,187	32
State	21,849	17,142	4,255	438	14
Local	1,938	279	1,478	177	4
Private sources	3,564	1,236	41	2,230	57
Students	23,896	9,583	1,935	11,792	586
Tuition and fees	15,774	5,014	1,381	8,896	483
Auxiliary enterprises[3]	8,122	4,569	554	2,896	103
Institutional[4]	11,353	5,594	355	5,358	46
	Percentage Distribution				
1970-71:					
Total	100.0	100.0	100.0	100.0	100.0
Government[1]	50.7	62.5	78.5	24.9	6.8
Federal[2]	19.3	19.7	6.8	22.4	5.5
State	27.6	41.7	40.8	1.7	1.1
Local	3.8	1.1	30.9	.8	.3
Private sources	5.1	2.6	.5	10.3	12.9
Students	34.1	26.3	19.3	49.8	76.3
Tuition and fees	21.0	13.1	13.0	35.4	49.9
Auxiliary enterprises[3]	13.1	13.2	6.3	14.4	26.4
Institutional[4]	10.1	8.6	1.8	15.0	3.9
1981-82:					
Total	100.0	100.0	100.0	100.0	100.0
Government[1]	46.2	57.6	72.8	19.9	6.7
Federal[2]	13.3	12.6	5.7	17.3	4.3
State	30.3	44.3	49.7	1.8	1.9
Local	2.7	.7	17.3	.7	.5
Private sources	4.9	3.2	.5	9.2	7.7
Students	33.1	24.8	22.6	48.8	79.4
Tuition and fees	21.9	13.0	16.1	36.8	65.4
Auxiliary enterprises[3]	11.3	11.8	6.5	12.0	14.0
Institutional[4]	15.7	14.5	4.1	22.2	6.3

[1]Includes appropriations, restricted and unrestricted grants and contracts.

[2]Includes appropriations, restricted and unrestricted grants and contracts, and independent operations such as Federally Funded Research and Development Centers (FFRDC).

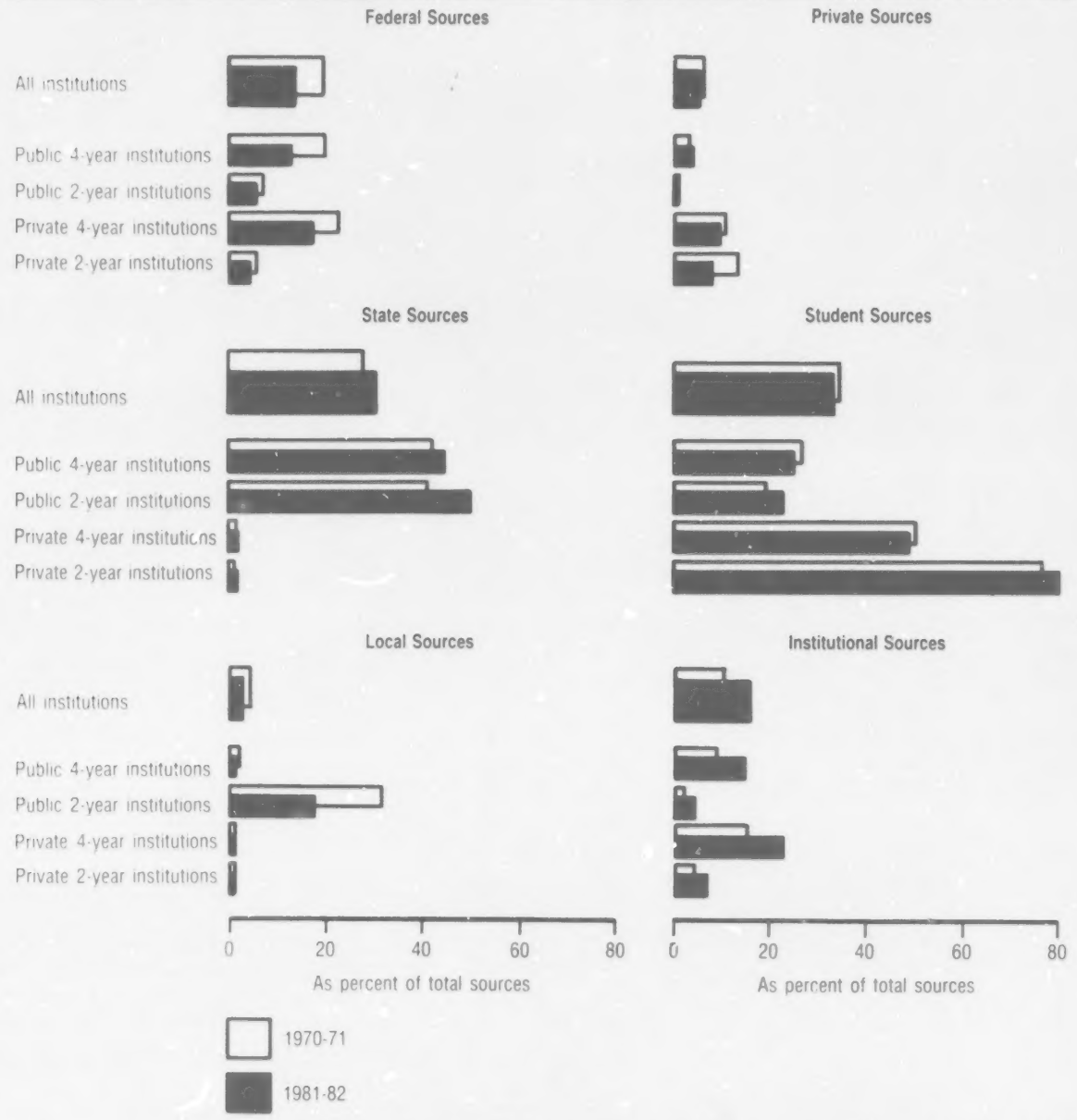
[3]Includes revenues generated by operations that were essentially self-supporting within the institutions, such as residence halls, food services, student health services, and college unions. Nearly all such revenues are derived from students.

[4]Includes endowment income, sales and services of educational activities, sales and services of hospitals, and other sources.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Financial Statistics of Institutions of Higher Education: Current Funds Revenues and Expenditures, 1970-71*, 1974; and Higher General Information Survey, Financial Statistics of Institutions of Higher Education, for fiscal year 1982, unpublished tabulations (November 1983).

Sources of Current Funds Revenues for Institutions of Higher Education



State funding for public higher education, already the largest single source, increased proportionately more than funding from Federal and local governments between 1970-71 and 1981-82. Student revenues continued to represent the largest single source for private institutions.

Table 2.8

Estimated Average Undergraduate Tuition and Room and Board Rates in Institutions of Higher Education Compared with Inflation Index,[1] by Type and Control of Institution: 1973-74 to 1982-83

Year and Control of Institution	Total Tuition, Room, and Board				Tuition				Inflation Index[1] (1973-74 = 100.0)
	All Institutions	Universities	Other 4-Year	2-Year	All Institutions	Universities	Other 4-Year	2-Year	
1973-74									
Public	**$1,517**	$1,707	$1,506	$1,274	$438	$581	$463	$274	**100.0**
Private	**3,164**	3,717	3,040	2,410	1,989	2,375	1,925	1,303	
1974-75									
Public	**1,563**	1,760	1,558	1,339	432	599	448	277	**111.1**
Private	**3,403**	4,076	3,156	2,591	2,117	2,614	1,954	1,367	
1975-76									
Public	**1,666**	1,935	1,657	1,386	433	642	469	245	**118.9**
Private	**3,663**	4,467	3,385	2,711	2,272	2,881	2,084	1,427	
1976-77[2]									
Public	**1,789**	2,066	1,828	1,490	479	689	564	283	**125.8**
Private	**3,907**	4,716	3,714	2,971	2,467	3,051	2,351	1,592	
1977-78[2]									
Public	**1,888**	2,170	1,932	1,589	512	736	596	306	**134.3**
Private	**4,158**	5,033	3,968	3,148	2,624	3,240	2,520	1,706	
1978-79[2]									
Public	**1,994**	2,289	2,027	1,691	543	777	622	327	**146.9**
Private	**4,514**	5,403	4,326	3,389	2,867	3,487	2,771	1,831	
1979-80[2]									
Public	**2,165**	2,487	2,198	1,821	583	840	662	355	**166.4**
Private	**4,912**	5,888	4,699	3,755	3,130	3,811	3,020	2,062	
1980-81[2]									
Public	**2,371**	2,711	2,420	2,020	633	915	721	385	**185.7**
Private	**5,468**	6,566	5,249	4,290	3,498	4,275	3,390	2,413	
1981-82[2]									
Public	**2,668**	3,079	2,701	2,217	721	1,042	813	432	**201.8**
Private	**6,184**	7,439	5,949	4,849	3,972	4,887	3,855	2,697	
1982–83									
Public	**2,944**	3,403	3,032	2,390	798	1,164	936	473	**210.5**
Private	**6,920**	8,537	6,646	5,364	4,439	5,583	4,329	3,008	

[1]Index constructed using Consumer Price Index data averaged on a school-year time frame with a base year of 1973-74.

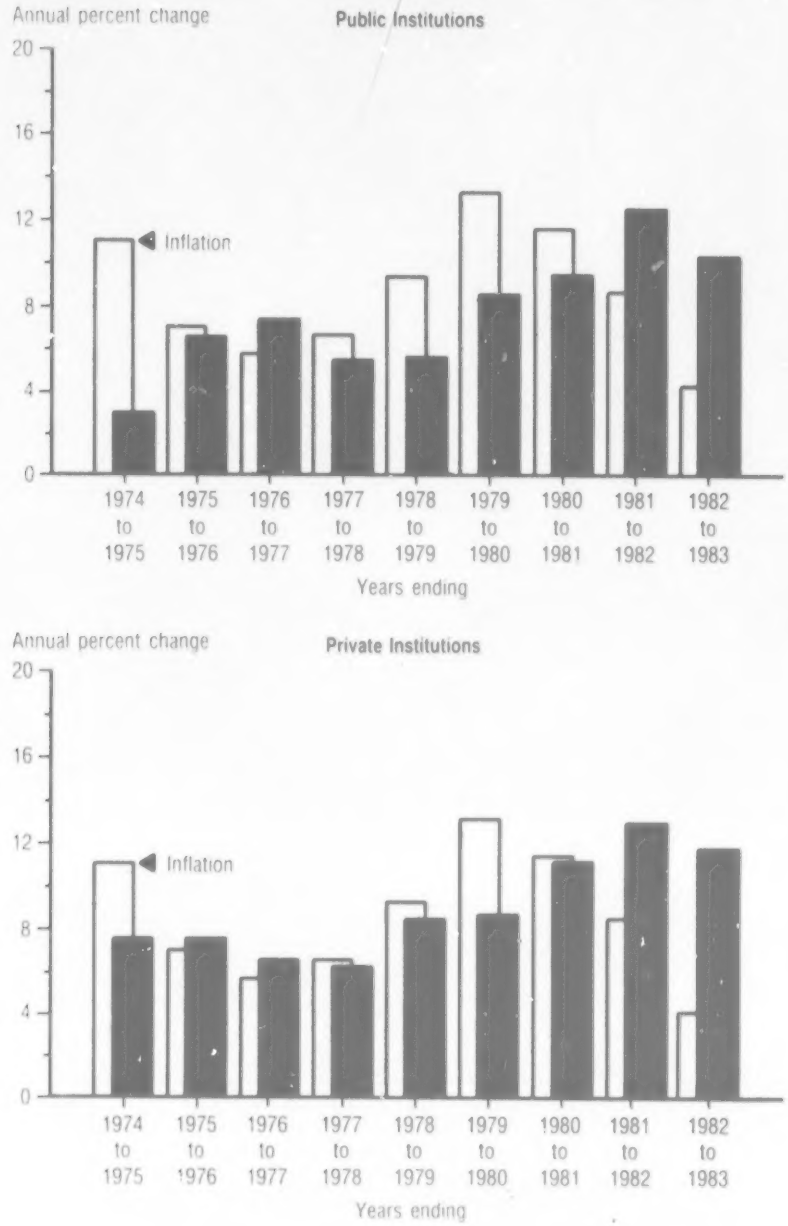
[2]Data have been revised since originally published.

NOTE: Data are for the entire academic year and are average charges. Tuition and fees were calculated on the basis of full-time-equivalent students (including undergraduate resident and non-resident students). Room and board rates were based on full-time students.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1986-87*, 1978; *Higher Education, Basic Student Charges, 1974-75*, 1976; and unpublished tabulations (July 1983).

Chart 2.8

Annual Percent Change in Average Undergraduate Tuition and Room and Board Rates, by Control of Institution



Increases in undergraduate charges followed the inflation rate, lagging behind it by a few years, so that when inflation dropped sharply after 1980-81, charges continued to rise.

Table 2.9

Trends in Current Funds Expenditures and Mandatory Transfers by Institutions of Higher Education and Per Full-Time-Equivalent (FTE) Student, by Control of Institution: 1970-71 to 1981-82

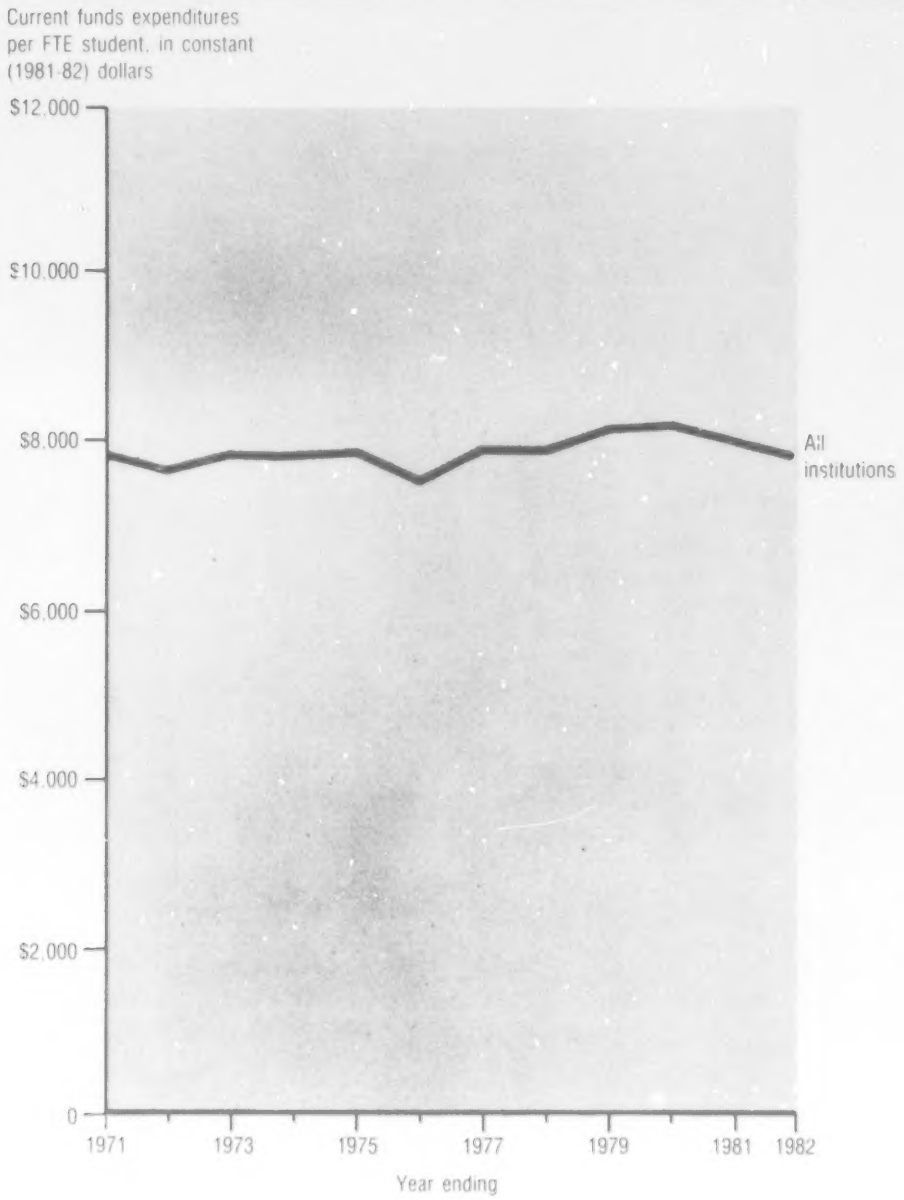
Control of Institution and Year	All Institutions		
	Current Funds Expenditures, in Millions		Current Funds Expenditures per FTE Student, in Constant (1981-82) Dollars*
	Current Dollars	Constant (1981-82) Dollars*	
Public and Private			
1970-71	$23,375	$52,785	$7,834
1971-72	25,560	54,658	7,646
1972-73	27,956	56,771	7,827
1973-74	30,714	58,258	7,816
1974-75	35,058	61,256	7,848
1975-76	38,903	63,756	7,519
1976-77	42,600	65,559	7,887
1977-78	45,971	66,318	7,881
1978-79	50,721	67,909	8,134
1979-80	56,914	69,357	8,172
1980-81	64,053	70,485	7,992
1981-82	70,339	70,339	7,803
Public			
1970-71	14,996	33,863	6,837
1971-72	16,484	35,251	6,596
1972-73	18,204	36,968	6,780
1973-74	20,336	38,574	6,852
1974-75	23,490	41,044	6,904
1975-76	26,184	42,911	6,579
1976-77	28,635	44,068	6,940
1977-78	30,725	44,325	6,930
1978-79	33,733	45,164	7,193
1979-80	37,768	46,025	7,200
1980-81	42,280	46,526	7,004
1981-82	46,219	46,219	6,816
Private			
1970-71	8,379	18,921	10,602
1971-72	9,075	19,407	10,756
1972-73	9,752	19,804	10,997
1973-74	10,377	19,684	10,792
1974-75	11,568	20,212	10,863
1975-76	12,719	20,845	10,649
1976-77	13,965	21,491	10,950
1977-78	15,246	21,994	10,894
1978-79	16,988	22,745	10,992
1979-80	19,146	23,331	11,138
1980-81	21,773	23,960	11,007
1981-82	24,120	24,120	10,801

*Dollars adjusted using the Higher Education Price Index, from National Institute of Education, *Inflation Measures for Schools and Colleges*, 1983.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey, Financial Statistics of Institutions of Higher Education and Fall Enrollment in Higher Education, unpublished tabulations (November 1983).

Higher Education Current Funds Expenditures Per Full-Time-Equivalent Student



When adjusted for inflation, current funds expenditures per full-time-equivalent student rose slightly from 1970-71 to 1979-80, but has fallen somewhat since then.

Table 2.10

Earned Degrees Conferred* by Institutions of Higher Education, by Level of Degree and Race/Ethnicity of Recipient: 1975-76 and 1980-81

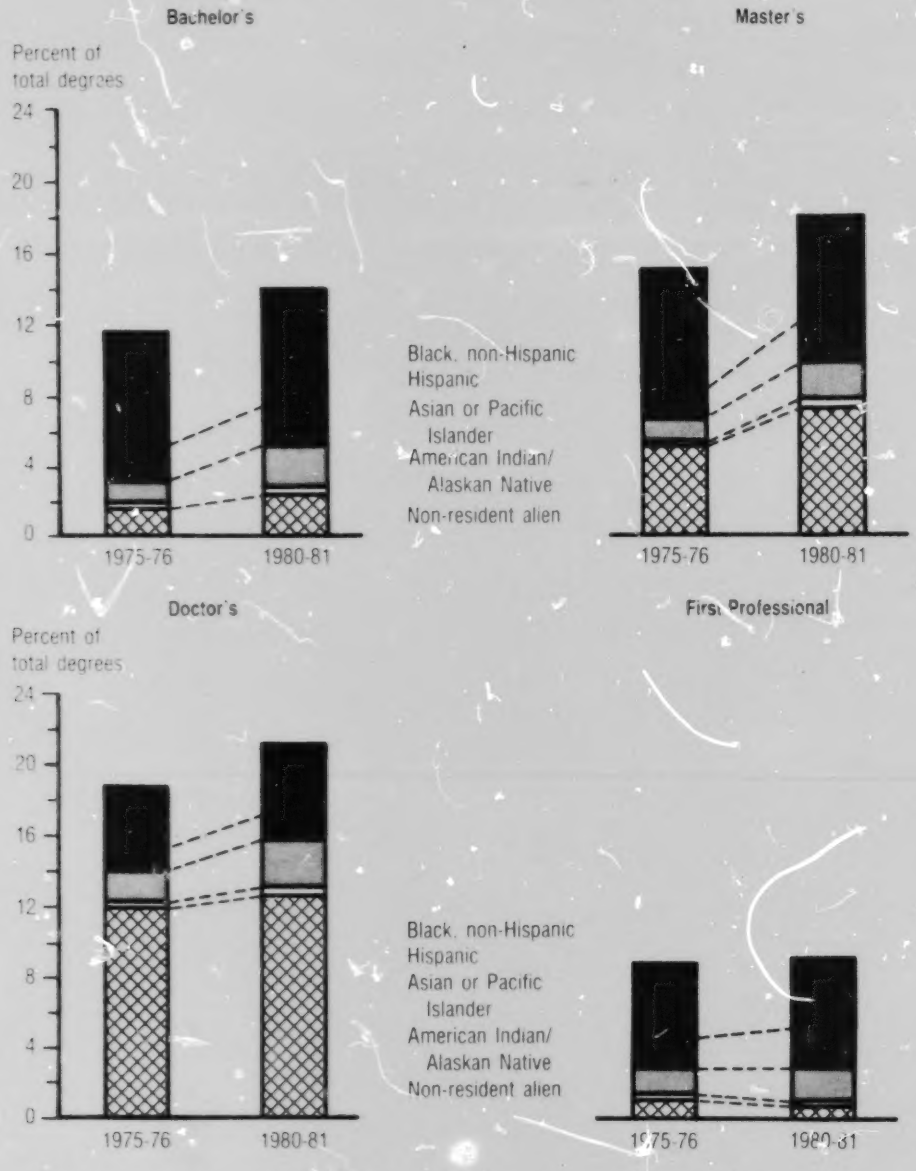
Level and Race/Ethnicity	1975-76	1980-81	1975-76	1980-81
	Number		Percentage Distribution	
Bachelor's	918,388	931,583	100.0	100.0
White, non-Hispanic	811,599	804,469	88.4	86.4
Total minority	91,777	104,541	**10.0**	**11.2**
Black, non-Hispanic	59,122	60,533	**6.4**	**6.5**
Hispanic	17,964	21,731	**2.0**	**2.3**
Asian or Pacific Islander	11,193	18,693	**1.2**	**2.0**
American Indian/ Alaskan Native	3,498	3,584	**.4**	**.4**
Non-resident alien	15,012	22,573	**1.6**	**2.4**
Master's	309,263	294,182	100.0	100.0
White, non-Hispanic	262,771	241,215	85.0	82.0
Total minority	30,418	30,910	**9.8**	**10.5**
Black, non-Hispanic	20,345	17,133	**6.6**	**5.8**
Hispanic	5,299	6,461	**1.7**	**2.2**
Asian or Pacific Islander	3,991	6,282	**1.3**	**2.1**
American Indian/ Alaskan Native	783	1,034	**.3**	**.4**
Non-resident alien	16,074	22,057	**5.2**	**7.5**
Doctor's	33,787	32,839	100.0	100.0
White, non-Hispanic	27,43[illegible]	25,908	81.2	78.3
Total minority	2,285	2,728	**6.8**	**8.3**
Black, non-Hispanic	1,213	1,265	**3.6**	**3.9**
Hispanic	396	456	**1.2**	**1.4**
Asian or Pacific Islander	583	877	**1.7**	**2.7**
American Indian/ Alaskan Native	93	130	**.3**	**.4**
Non-resident alien	4,068	4,203	**12.0**	**12.8**
First-professional	62,085	71,273	100.0	100.0
White, non-Hispanic	56,332	64,490	90.7	90.5
Total minority	4,924	6,114	**7.9**	**8.6**
Black, non-Hispanic	2,694	2,929	**4.3**	**4.1**
Hispanic	1,079	1,540	**1.7**	**2.2**
Asian or Pacific Islander	962	1,454	**1.5**	**2.0**
American Indian/ Alaskan Native	189	191	**.3**	**.3**
Non-resident alien	829	669	**1.3**	**.9**

*Excludes degrees conferred by U.S. Service Schools, included in tabulations presented elsewhere in this publication.

SOURCE: U.S. Department of Education, Office for Civil Rights, *Data on Earned Degrees Conferred from Institutions of Higher Education, by Race, Ethnicity, and Sex*, various years.

Chart 2.10

Minority and Non-Resident Alien Share of Earned Degrees Conferred, by Level of Degree



Minorities represented approximately one-tenth of degree recipients at each level in 1980-81 a minimal increase from 1975-76. Representation of non-resident aliens varied considerably by level: in 1980-81 they comprised 2 percent of bachelor's, 8 percent of master's, 13 percent of doctor's, and 1 percent of first-professional degree recipients.

Table 2.11

Trends in Bachelor's Degrees Conferred by Institutions of Higher Education, by Sex of Recipient: 1979-71 to 1992-93

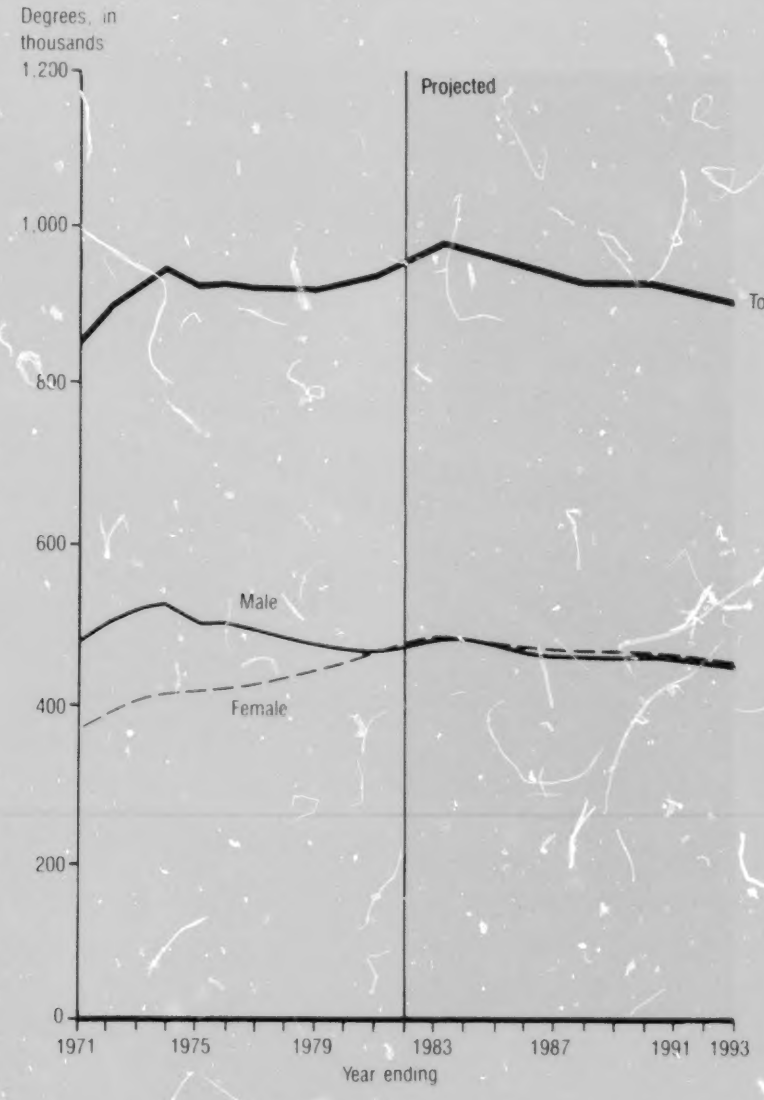
Year	Total	Male	Female	Females as Percent of Total
1970-71	839,730	475,594	364,136	43.4
1971-72	887,273	500,590	386,683	43.6
1972-73	922,362	518,191	404,171	43.8
1973-74	945,776	527,313	418,463	44.2
1974-75	922,933	504,841	418,092	45.3
1975-76	925,746	504,925	420,821	45.5
1976-77	919,549	495,545	424,004	46.1
1977-78	921,204	487,347	433,857	47.1
1978-79	921,390	477,344	444,046	48.2
1979-80	929,417	473,611	455,806	49.0
1980-81	935,140	469,883	465,257	49.8
1981-82	952,998	473,364	479,634	50.3
		Projected*		
1982-83	970,000	480,000	490,000	50.5
1983-84	970,000	485,000	485,000	50.0
1984-85	960,000	480,000	480,000	50.0
1985-86	945,000	470,000	475,000	50.3
1986-87	935,000	465,000	470,000	50.3
1987-88	927,000	462,000	465,000	50.2
1988-89	927,000	462,000	465,000	50.2
1989-90	927,000	462,000	465,000	50.2
1990-91	922,000	460,000	462,000	50.1
1991-92	915,000	456,000	459,000	50.2
1992-93	900,000	449,000	451,000	50.1

*For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey, *Earned Degrees Conferred by Institutions of Higher Education*, various years, and unpublished tabulations (November 1983); and *Projections of Education Statistics to 1992-93*, forthcoming.

Chart 2.11

Bachelor's Degrees Conferred, by Sex of Recipient



The number of bachelor's degrees awarded annually fluctuated wildly during the 1970's and is expected to reach a high point in the first half of the 1980's. Females represented approximately 44 percent of the bachelor's degree recipients in the early 1970's, rising to about 50 percent in the 1980's.

Table 2.12

Earned Degrees Conferred by Institutions of Higher Education, by Level of Degree and Discipline Division (New Classification): 1970-71 and 1981-82

Discipline Division	Bachelor's			Master's			Doctor's		
	1970-71	1981-82	Percent Change	1970-71	1981-82	Percent Change	1970-71	1981-82	Percent Change
Total	839,730	952,998	13.5	230,509	295,546	28.2	32,107	32,707	1.9
Agribusiness and agricultural production	3,207	5,037	57.1	573	947	65.3	255	237	7.1
Agricultural sciences	7,061	12,395	75.5	1,501	2,510	67.2	745	713	.3
Renewable natural resources	2,404	3,597	49.6	383	706	84.3	116	129	11.2
Architecture and environmental design	5,570	9,728	74.6	1,705	3,327	95.1	36	80	122.2
Area and ethnic studies	2,582	2,862	10.8	1,032	803	21.6	144	102	29.2
Business and management	**113,542**	**212,474**	87.1	**26,481**	**61,775**	131.5	807	855	5.9
Business and office	1,323	1,527	15.4	0	4	—	0	0	—
Communications	10,324	32,428	214.1	1,770	3,104	75.4	145	182	25.5
Communications technologies	478	1,794	275.3	86	223	159.3	0	18	—
Computer and information sciences	2,388	20,267	748.7	1,588	4,935	210.8	128	251	96.1
Education	**176,614**	**101,113**	42.7	**88,952**	**53,757**	5.4	**6,403**	**7,680**	19.9
Elementary education, general	90,432	37,261	58.8	17,070	12,788	25.1	249	201	8.2
Special education, general and all specialties	8,360	14,180	69.6	6,068	14,258	135.0	207	331	59.9
Engineering	**44,898**	**67,021**	49.3	**16,309**	**17,526**	7.5	**3,637**	**2,621**	27.9
Engineering and engineering-related technologies	5,148	12,984	152.2	134	413	208.2	1	15	1,400.0
Foreign languages	19,945	9,841	50.7	4,755	2,008	57.8	781	536	31.3
Allied health	2,556	6,056	136.9	185	654	253.5	10	4	60.0
Health sciences	**22,634**	**57,329**	153.3	**5,265**	**15,288**	190.6	449	906	101.8
Home economics	10,825	17,265	59.5	1,420	2,325	63.7	121	247	104.1
Vocational home economics	342	607	77.5	32	30	6.3	2	0	100.0
Law	545	846	55.2	955	1,893	98.2	20	22	10.0
Letters	64,933	34,334	47.1	11,149	6,421	42.4	1,857	1,313	29.3
Liberal general studies	5,461	18,145	232.3	549	1,094	99.3	11	35	218.2
Library and archival sciences	1,013	307	69.7	7,001	4,506	35.6	39	84	115.4
Life sciences	**35,743**	**41,639**	16.5	5,728	5,874	2.5	**3,645**	**3,743**	2.7
Mathematics	24,001	11,599	53.2	5,001	2,727	47.5	1,195	681	43.2
Military sciences	357	283	20.7	2	49	2350.0	0	0	—
Multi-interdisciplinary studies	8,306	17,651	112.5	1,157	3,884	235.7	80	358	347.5
Parks and recreation	1,621	5,335	229.1	218	526	141.3	2	33	1550.0
Philosophy and religion	8,146	6,309	22.6	1,326	1,152	13.1	554	364	34.3
Theology	3,744	5,998	60.2	2,710	4,064	50.0	312	1,288	312.8
Physical sciences	21,412	24,052	12.3	6,367	5,514	13.4	**4,390**	**3,286**	25.1
Psychology	37,880	41,031	8.3	4,431	7,791	75.8	**1,782**	**2,770**	56.0
Protective services	2,045	12,436	508.2	194	1,336	588.7	1	24	2300.0
Public affairs	6,252	18,739	199.7	**8,215**	**18,246**	121.7	185	389	110.3
Social sciences	**155,236**	**99,545**	35.9	**16,476**	**11,892**	27.8	**3,659**	**3,061**	16.3
Visual and performing arts	30,394	40,422	33.0	6,675	8,746	31.0	621	670	7.9

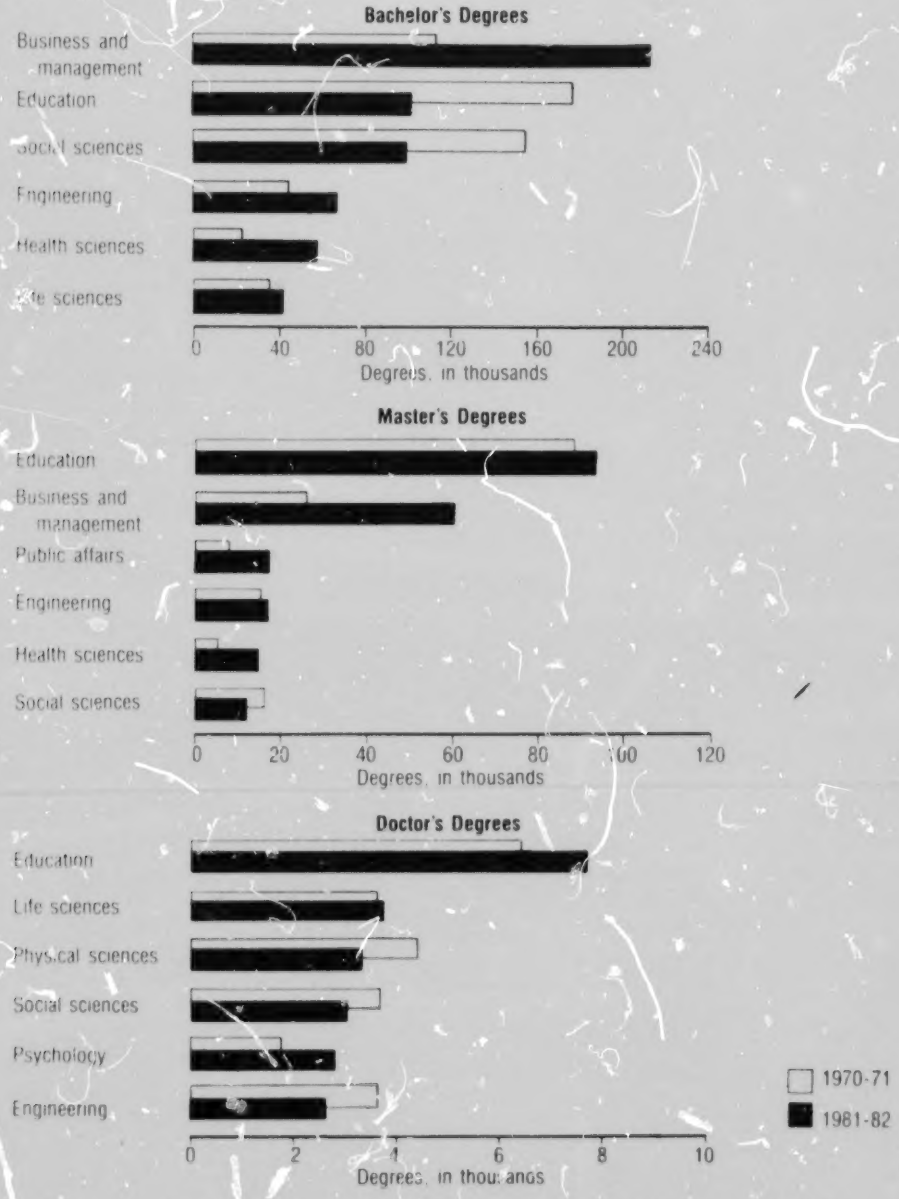
— Not applicable

NOTE: Caution should be exercised in comparing 1971 and 1982 figures when actual number of degrees conferred in specialty is small.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Earned Degrees Conferred: Examination of Recent Trends, 1971* and Higher Education General Information Survey, Earned Degrees Conferred, unpublished tabulations (October 1983).

Chart 2.12

Earned Degrees Conferred by Level and Largest Discipline Divisions in 1981-82



Bachelor's degrees in business and management almost doubled between 1970-71 and 1981-82, making this field the largest undergraduate discipline in 1981-82. Education degrees, by contrast, declined by 43 percent at the bachelor's level but, with modest increases, retained the top positions at the master's and doctor's levels.

Table 2.13

Percent of Earned Degrees Awarded to Females by Institutions of Higher Education, by Level of Degree and Discipline Division (New Classification): 1970-71 and 1981-82

Discipline Division	Bachelor's		Master's		Doctor's	
	1970-71	1981-82	1970-71	1981-82	1970-71	1981-82
	Percent Awarded to Females					
Total	43 4	50 3	40 1	50 8	14 3	32 1
Agribusiness and agricultural production	1 6	20 2	3 7	13 1	1 6	11 4
Agricultural sciences	6 2	36 8	7 5	26 0	3 8	15 6
Renewable natural resources	2 1	28 0	2 9	23 4	0	12 4
Architecture and environmental design	11 9	29 8	13 8	32 6	8 3	27 5
Area and ethnic studies	52 4	63 9	38 3	49 3	16 7	43 1
Business and management	**8.1**	**39.0**	**3.9**	**27.8**	2 9	17 7
Business and office	97 4	95 9	—	50 0	—	—
Communications	35 5	57 0	34 6	53 3	13 1	31 9
Communications technologies	31 0	45 9	34 9	42 6	0	33 3
Computer and information sciences	13 6	34 8	10 3	26 5	2 3	8 4
Education	**74.5**	**75.9**	**56.2**	**72.3**	**21.2**	**48.6**
Engineering	**.8**	**12.3**	**1.1**	**9.0**	**.6**	**5.3**
Engineering and engineering-related technologies	8	6 7	0	13 3	0	13 3
Foreign languages	74 6	75 7	65 5	69 7	38 0	54 9
Allied health	85 3	86 2	70 3	78 1	0	25 0
Health sciences	**76.2**	**83.9**	**55.4**	**75.8**	16 7	45 3
Home economics	98 4	95 8	94 2	91 4	60 3	70 4
Vocational home economics	62 6	51 9	81 2	93 3	100 0	—
Law	5 0	50 8	4 8	20 2	0	9 1
Letters	65 5	65 7	60 3	64 9	28 0	52 2
Liberal general studies	29 0	55 9	44 3	61 1	27 3	42 9
Library and archival sciences	92 0	86 0	81 3	82 3	28 2	63 1
Life sciences	**29.1**	**45.4**	33 6	41 7	**16.3**	**29.1**
Mathematics	38 0	43 2	29 2	33 2	7 8	13 8
Military sciences	3	7 4	0	2 0	—	—
Multi-interdisciplinary studies	28 4	48 2	30 9	37 8	13 8	38 0
Parks and recreation	34 7	62 4	29 8	47 5	50 0	21 2
Philosophy and religion	24 8	33 3	32 3	40 3	7 9	21 2
Theology	27 2	25 6	24 4	34 8	1 9	8 0
Physical sciences	13 8	25 7	13 3	21 7	**5.6**	**13.7**
Psychology	44 5	66 8	37 2	58 8	**24.0**	**45.4**
Protective services	9 2	38 2	10 3	27 1	0	41 7
Public affairs	60 2	69 4	**49.2**	**59.8**	23 8	46 0
Social sciences	**36.8**	**44.6**	**28.5**	**37.7**	**13.9**	**26.9**
Visual and performing arts	59 7	63 3	47 4	55 8	22 2	43 3

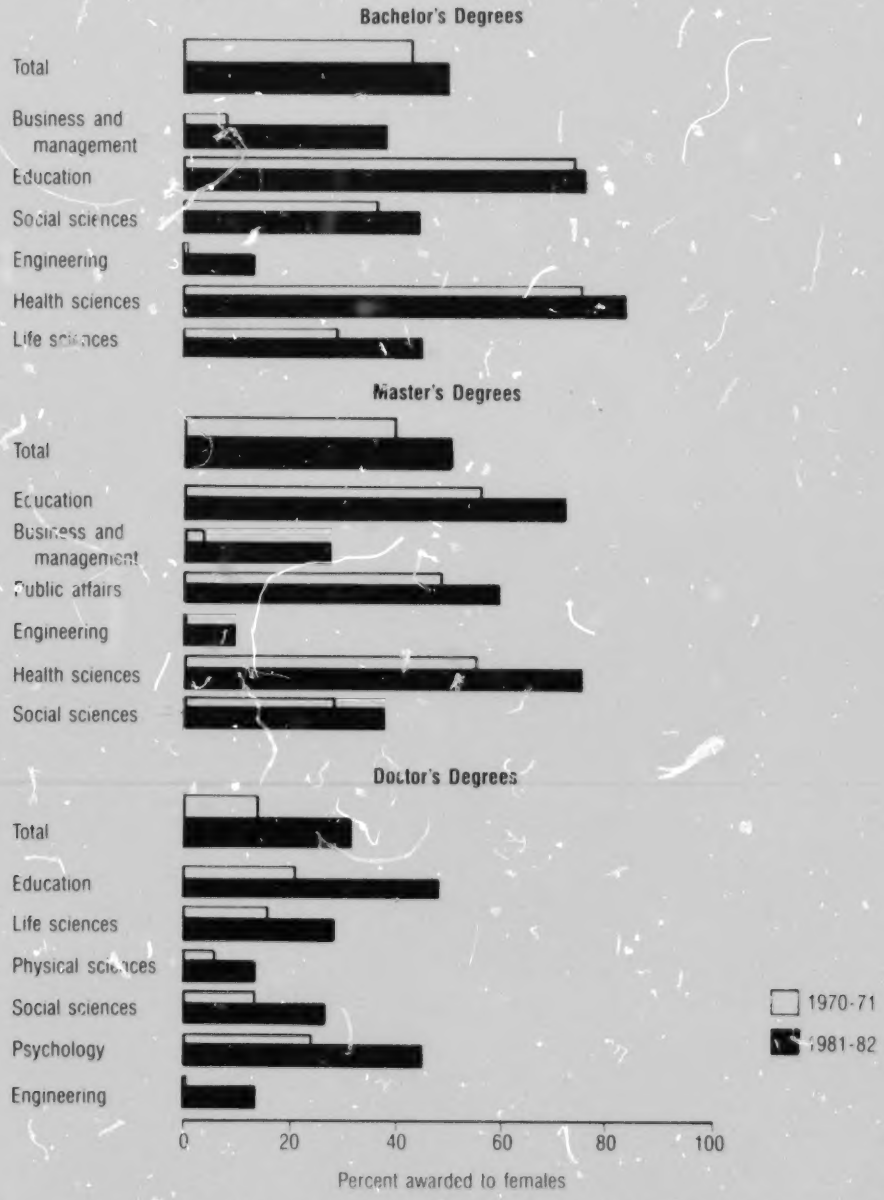
— Not applicable

NOTE: Caution should be exercised in comparing 1971 and 1982 figures when actual number of degrees conferred in specialty is small

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Earned Degrees Conferred: Examination of Recent Trends*, 1981, and Higher Education General Information Survey, Earned Degrees Conferred, unpublished tabulations (October 1983)

Chart 2.13

Percent of Earned Degrees Awarded to Females, by Level and in Largest Discipline Divisions



Female degree recipients continued to dominate education and health sciences, two of the largest discipline divisions at the bachelor's and master's levels. Females also substantially increased their representation in degree fields traditionally dominated by males, notably in business and management.

Table 2.14

Trends in Master's Degrees Conferred by Institutions of Higher Education, by Sex of Recipient: 1970-71 to 1992-93

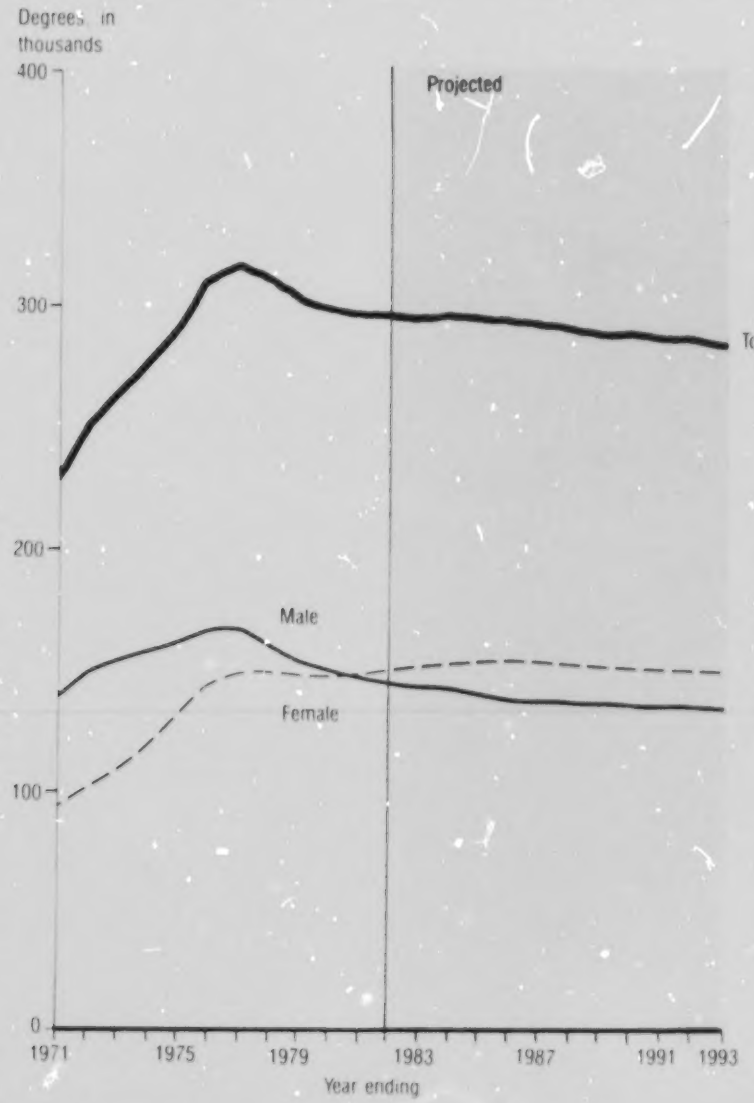
Year	Total	Male	Female	Females as Percent of Total
1970-71	230,509	138,146	92,363	40.1
1971-72	251,633	149,550	102,083	40.6
1972-73	263,371	154,468	108,903	41.3
1973-74	277,033	157,842	119,191	43.0
1974-75	292,450	161,570	130,880	44.8
1975-76	311,771	167,248	144,523	46.4
1976-77	317,164	167,783	149,381	47.1
1977-78	311,620	161,212	150,408	48.3
1978-79	301,079	153,370	147,709	49.1
1979-80	298,081	150,749	147,332	49.4
1980-81	295,739	147,043	148,696	50.3
1981-82	295,546	145,532	150,014	50.8
		Projected*		
1982-83	295,000	143,000	152,000	51.5
1983-84	296,000	143,000	153,000	51.7
1984-85	295,000	141,000	154,000	52.2
1985-86	294,000	139,000	155,000	52.7
1986-87	292,000	138,000	154,000	52.7
1987-88	291,000	138,000	153,000	52.6
1988-89	289,000	137,000	152,000	52.6
1989-90	289,000	137,000	152,000	52.6
1990-91	287,000	136,000	151,000	52.6
1991-92	287,000	136,000	151,000	52.6
1992-93	285,000	135,000	150,000	52.6

*For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey, *Earned Degrees Conferred by Institutions of Higher Education*, various years, and unpublished tabulations (November 1983), and *Projections of Education Statistics to 1992-93*, forthcoming.

Chart 2.14

Master's Degrees Conferred, by Sex of Recipient



Having peaked at 317,200 in 1976-77, the number of master's degrees awarded annually is expected to remain under 300,000 into the 1990's. During that period, females, who became the majority of master's recipients in 1980-81, are projected to continue comprising more than half of the recipients.

Table 2.15

Trends in Doctor's Degrees Conferred by Institutions of Higher Education, by Sex of Recipient: 1970-71 to 1992-93

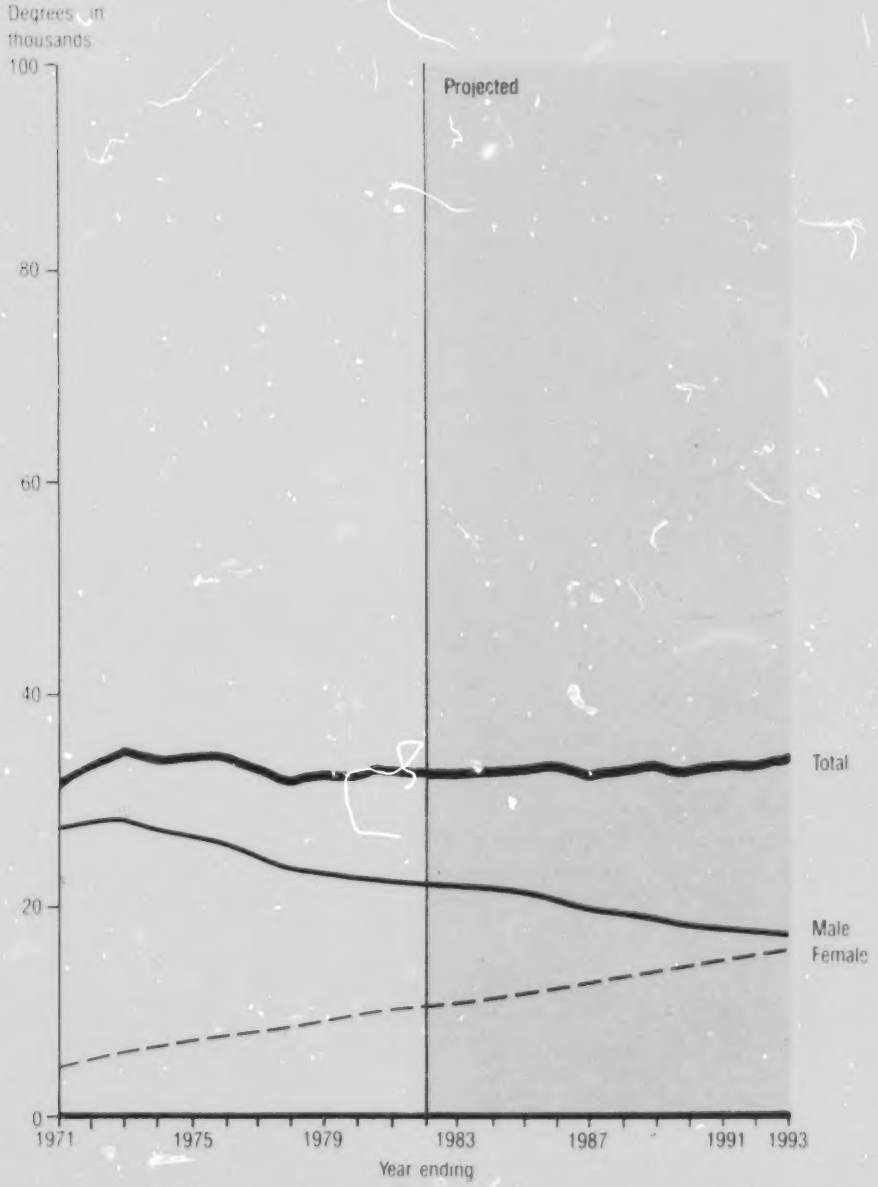
Year	Total	Male	Female	Females as Percent of Total
1970-71	32,107	27,530	4,577	14.3
1971-72	33,363	28,090	5,273	15.8
1972-73	34,777	28,571	6,206	17.8
1973-74	33,816	27,365	6,451	19.1
1974-75	34,083	26,817	7,266	21.3
1975-76	34,064	26,267	7,797	22.9
1976-77	33,232	25,142	8,090	24.3
1977-78	32,131	23,658	8,473	26.4
1978-79	32,730	23,541	9,189	28.1
1979-80	32,615	22,943	9,672	29.7
1980-81	32,958	22,711	10,247	31.1
1981-82	32,707	22,224	10,483	32.1
		Projected*		
1982-83	32,700	22,000	10,700	32.7
1983-84	33,000	21,700	11,300	34.2
1984-85	33,200	21,400	11,800	35.5
1985-86	33,400	21,100	12,300	36.8
1986-87	32,600	19,700	12,900	39.6
1987-88	32,800	19,400	13,400	40.9
1988-89	33,100	19,100	14,000	42.3
1989-90	32,800	18,300	14,500	44.2
1990-91	33,200	18,100	15,100	45.5
1991-92	33,400	17,800	15,600	46.7
1992-93	33,600	17,500	16,100	47.9

*For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey, *Earned Degrees Conferred by Institutions of Higher Education*, various years, and unpublished tabulations (November 1983), and *Projections of Education Statistics to 1992-93*, forthcoming.

Chart 2.15

Doctor's Degrees Conferred, by Sex of Recipient



The annual number of doctor's degrees awarded in the remainder of the 1980's is expected to show little change, continuing the pattern set in the 1970's. The projected stability in total degrees masks substantial declines expected in the number of doctorates awarded to men and appreciable increases anticipated in those awarded to women.

Table 2.16

Trends in First-Professional Degrees Conferred by Institutions of Higher Education, by Sex of Recipient: 1970-71 to 1992-93

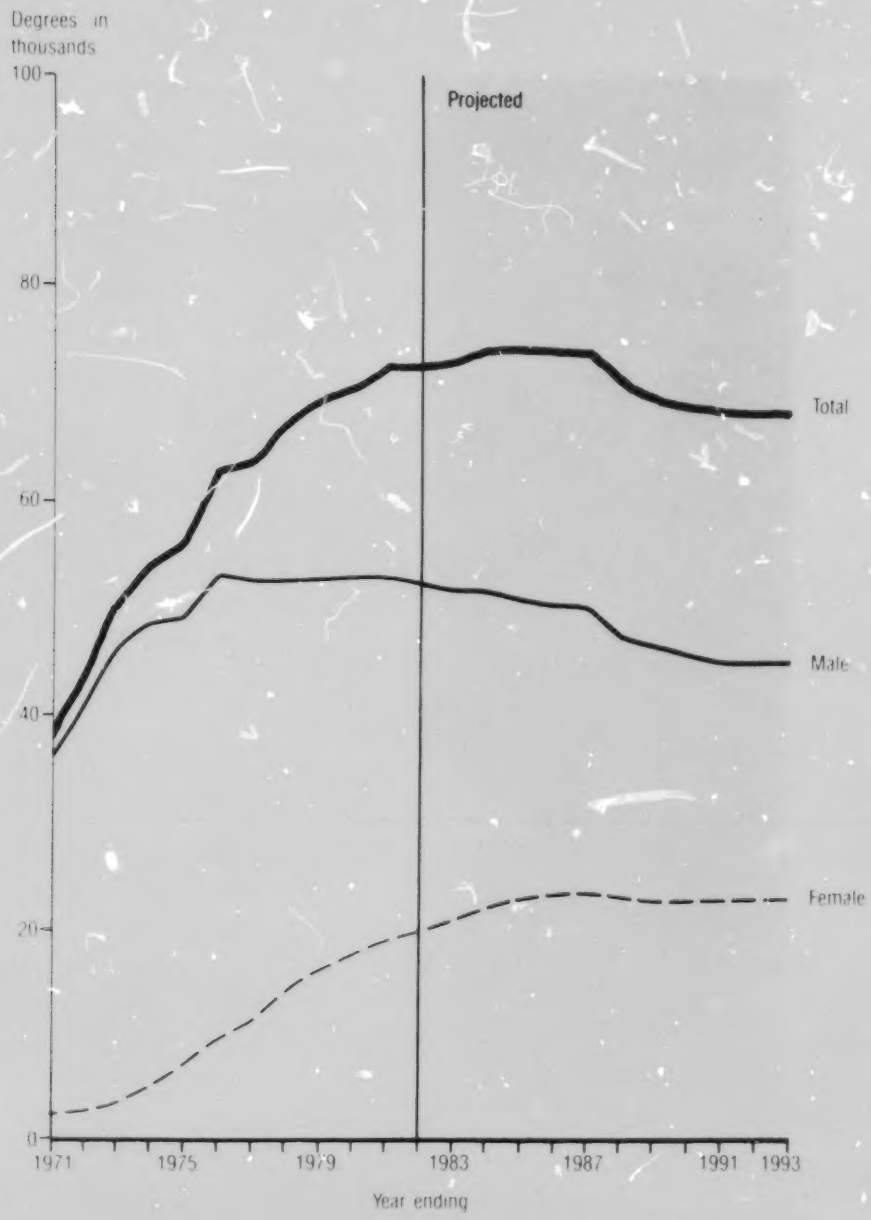
Year	Total	Male	Female	Females as Percent of Total
1970-71	37,946	35,544	2,402	6.3
1971-72	43,411	40,723	2,688	6.2
1972-73	50,018	46,489	3,529	7.1
1973-74	53,816	48,530	5,286	9.8
1974-75	55,916	48,956	6,960	12.4
1975-76	62,649	52,892	9,757	15.6
1976-77	63,359	52,374	10,985	17.3
1977-78	66,581	52,270	14,311	21.5
1978-79	68,848	52,652	16,196	23.5
1979-80	70,131	52,716	17,415	24.8
1980-81	71,956	52,792	19,164	26.6
1981-82	72,032	52,223	19,809	27.5
		Projected*		
1982-83	72,500	51,500	21,000	29.0
1983-84	73,500	51,500	22,000	29.9
1984-85	73,700	50,700	23,000	31.2
1985-86	73,500	50,200	23,300	31.7
1986-87	73,400	49,900	23,500	32.0
1987-88	70,200	47,100	23,100	32.9
1988-89	68,900	46,300	22,600	32.8
1989-90	68,300	45,500	22,800	33.4
1990-91	67,800	44,900	22,900	33.8
1991-92	67,800	44,900	22,900	33.8
1992-93	67,800	44,900	22,900	33.8

*For methodological details, see *Projections of Education Statistics to 1992-93*, forthcoming.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey, *Earned Degrees Conferred by Institutions of Higher Education*, various years, and unpublished tabulations (November 1983); and *Projections of Education Statistics to 1992-93*, forthcoming.

Chart 2.16

First-Professional Degrees Conferred, by Sex of Recipient



The number of first-professional degrees awarded annually nearly doubled during the 1970's but is projected to stabilize and decline slightly into the 1990's. The increased number of female recipients was largely responsible for the rise.

Table 2.17

First-Professional Degrees Conferred by Institutions of Higher Education, by Discipline Specialty and Percent Awarded to Females: 1970-71 and 1981-82

Discipline Specialty	1970-71		1981-82		Percent Change in Total Between 1970-71 and 1981-82
	Total	Percent Awarded to Females	Total	Percent Awarded to Females	
Total	37,946	6.3	72,032	27.5	82.3
Dentistry	**3,745**	**1.1**	**5,282**	**15.4**	41.0
Medicine	**8,919**	**9.1**	**15,814**	**25.0**	77.3
Optometry	531	2.4	1,110	19.9	109.0
Osteopathic medicine	472	2.3	1,047	17.9	121.8
Pharmacy	(1)	(1)	625	41.6	—
Podiatry	240	2.1	598	10.5	149.2
Veterinary medicine	1,252	7.8	2,038	36.2	62.8
Chiropractic medicine	(1)	(1)	2,626	17.9	—
Law	**17,421**	**7.1**	**35,991**	**33.4**	106.6
Theology	**5,055**	**2.3**	**6,901**	**15.7**	36.5
Other	311	21.2	0	—	—

— Not applicable

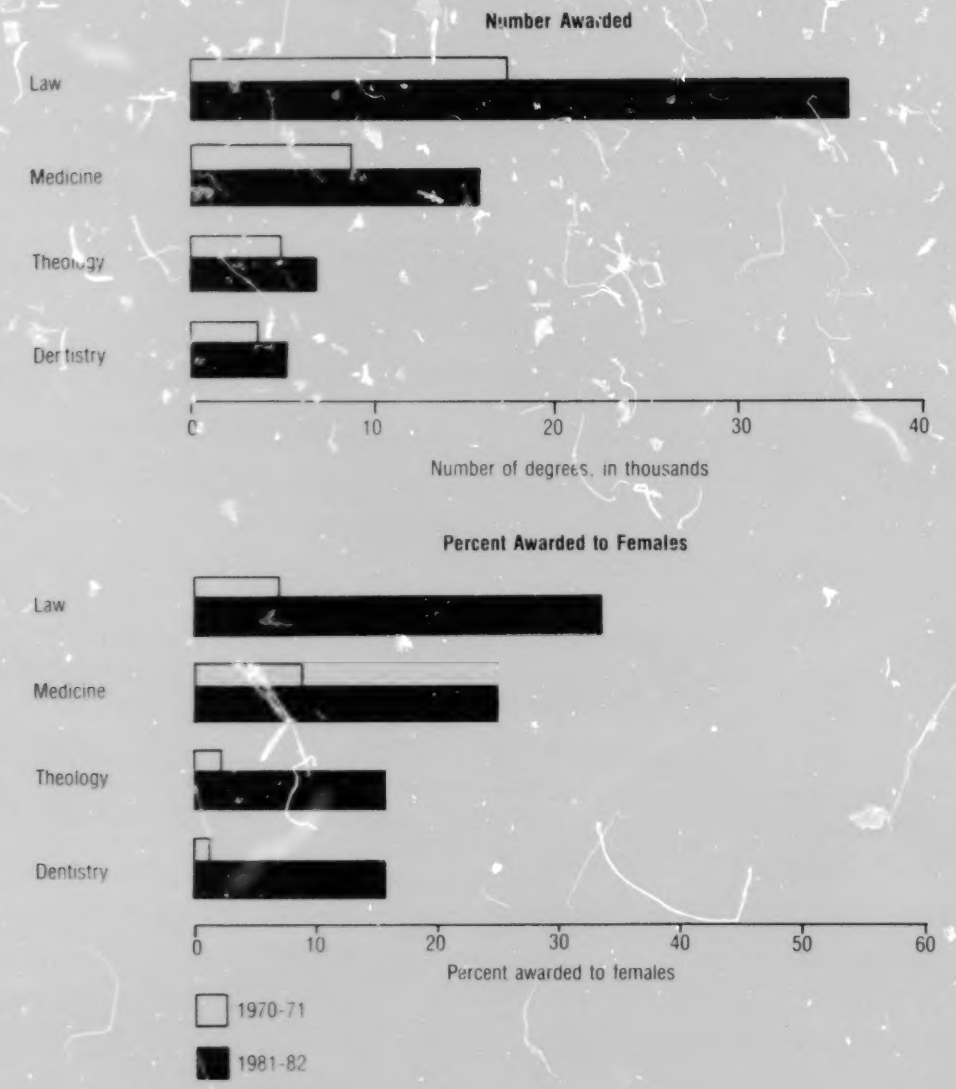
[2] Adjusted for reporting differences. The decrease in "other" in 1981-82 is partly due to a reporting change. Pharmacy and chiropractic medicine were not classified as first-professional degrees in 1970-71. The total figures used for calculating the percent change exclude pharmacy (625) and chiropractic medicine (2,626) in 1981-82 and "other" (311) in 1970-71.

[1] Pharmacy and chiropractic medicine were not classified as first-professional degrees in 1970-71.

SOURCE: U.S. Department of Education, National Center for Education Statistics. *Earned Degrees Conferred: An Examination of Recent Trends*, 1981; and Higher Education General Information Survey, Earned Degrees Conferred, unpublished tabulations (October 1983).

Chart 2.17

First-Professional Degrees Conferred in Largest Discipline Specialties



Between 1970-71 and 1981-82, the number of first-professional degrees awarded more than doubled in law and increased by three-fourths in medicine. Females increased their representation appreciably across all first-professional fields.

Chapter 3
Vocational Education: Secondary and Postsecondary Participation

This chapter describes vocational education participation at both the secondary and postsecondary levels. Because of the importance of external economic factors in employment, the chapter begins with a look at the current occupational picture and the outlook for the mid-1990's. This is followed by a description of vocational education participation at the secondary level. Information is presented on the typical amounts and types of vocational coursework taken in high school, as well as on differences in coursework among various groups of students and schools. This section also describes the association of high school vocational education with short-term occupational outcomes. The chapter then shifts its focus to participation in vocational education at the postsecondary level. Data are presented that link postsecondary educational experiences with vocational coursework taken in high school. The chapter then presents estimates of the number and composition of participants earning vocational credit through different types of postsecondary education providers.

Employment Outlook

How successfully young people make the transition from school to work depends not only on their preparation, but also on external economic conditions. Employment opportunities are closely tied to demand for products and services. With the prospect of continued improvements in productivity and technological innovations it follows that certain types of jobs will change and new jobs will be created. The Bureau of Labor Statistics (BLS) has projected trends in employment over the next decade that indicate what might happen to the job market and employment under alternative responses to these economic changes. The moderate-growth case, which is discussed here, is marked by a period of recovery from the 1982 recession, followed by stable economic growth through the remainder of the 1980's and into the mid-1990's.

The projections made by BLS indicate that, over the next decade, total employment is expected to rise, with a gain of more than 25 million jobs (entry 3.1).[1] Although some of these increases will be in the heavy manufacturing industries, most of the new job opportunities will be in service-producing industries such as medical care, business and professional services, and recreation and amusements. Long-range economic, technological, and social developments will influence the broad occupational structure between 1982 and 1995. Major occupational trends, however, are expected to continue in much the same manner as those that have occurred over the past several decades.

The projections indicate that, under moderate economic growth, professional and technical workers will see the most substantial increase in employment, a 31 percent change between 1982 and 1995. White-collar jobs on the average are expected to increase by 28 percent. Projected employment increases for blue-collar workers range from a low of 19 percent for operatives to a high of 27 percent for craftsmen and related workers. Increases for service workers are projected at about 27 percent. For farm workers, projections are in a negative direction, with an expected decline of about 11 percent in employment over the next decade.

Technological improvements will likely affect growth in many occupations through the mid-1990's. Office automation and the use of word processing equipment may slow growth in some clerical occupations, especially in typing. Likewise, industrial automation and advancements in robotics will reduce growth in the employment of welders and production workers. Despite these changes, however, employment should continue to grow in most traditional fields between 1982 and 1995. Occupations expected to show the largest growth in terms of percentage change include computer service technicians and legal assistants, while those projected to increase most in absolute numbers include building custodians and cashiers.

Although employment in occupations requiring specialized training in postsecondary institutions is predicted to increase substantially, a rise is also anticipated in the number of jobs that do not require postsecondary

[1] U.S. Department of Labor, Bureau of Labor Statistics, *Monthly Labor Review*, November, 1983.

training. A rapid increase in the demand for medical services, for example, will increase the need for nurse aides and orderlies as well as highly skilled medical practitioners.

Secondary Vocational Education

In 1982, 27 percent of all high school seniors described the high school program in which they were enrolled as "vocational (occupational preparation)." Thirty-eight percent said they were in an academic program and 36 percent reported being in a general program. Seventy-five percent of all 1982 graduates of public high schools had taken at least one vocational course that could be described as occupational, that is, a course designed to provide intensive preparation for a specific occupation. Eighty-nine percent had taken some kind of exploratory vocational education coursework, that is, coursework which generally provides an introduction or overview of an occupational field or area. Only 5 percent earned no credit in vocational courses.

These data were obtained from the transcript file of the High School and Beyond (HS&B) study. This file can be used to describe the secondary vocational coursework taken by 1982 high school graduates from their freshman through senior years, and, as such, provides a current look at vocational education in American high schools. All courses that could be considered vocational on the graduates' high school transcripts were classified into nine subject matter areas: agriculture, business, marketing, technical, health, trades and industry, vocational home economics, industrial arts, and consumer home economics. Coursework was further classified as occupational or exploratory. Occupational vocational courses prepare participants for specific semiskilled, skilled, or technical occupations. Exploratory vocational courses do not directly relate to paid employment and typically provide an introduction to or overview of a particular subject area. For example, Typing I was considered to be exploratory while Typing II was classified as occupational. For these analyses, industrial arts and consumer home economics were considered to be exploratory. Credits in each vocational course are expressed here in Carnegie units, one unit being equivalent to a full-year course.

Coursework Participation in Different Types of Schools

The HS&B transcript file furnishes basic information on vocational courses taken by both public and private high school graduates. For public school graduates, greater detail is available on differences by region, metropolitan status, and school enrollment size. In the public school sector, students may receive vocational instruction in comprehensive and vocational secondary schools, as well as in area vocational centers. Vocational offerings are generally more limited in private schools given the emphasis on college preparatory curriculum.

The average public school graduate earned over twice as many credits in vocational education as did the average private school graduate, 4.4 units compared with 2.0 units (entry 3.2). And while the average public school graduate earned about 20 percent of his or her total credits in vocational education, the corresponding figure for private school graduates was just 9 percent. Within both types of schools, about half of the vocational credits earned were in exploratory vocational courses.

Students who graduated from public schools in the North Central region earned more vocational education credits, on the average, than did public school graduates in the Northeast, South, or West (4.8, 4.0, 4.5, and 4.2 units for each region, respectively). Similarly, the average public high school graduate who attended a rural school as compared with an urban or suburban school, earned more credits in vocational education (4.9 units to 4.1 and 4.2 units, respectively). The average rural graduate differed from the average suburban or urban graduate in the amount of coursework taken in both occupational and exploratory vocational courses.

In general, public school graduates from smaller schools

U.S. Department of Education, National Center for Education Statistics, High School and Beyond Study, 1980 Sophomore Cohort, Data File User's Manual, 1983.

tended to earn more credits in vocational education than graduates from larger schools. In public schools with enrollments of 500 or less the average graduate earned 5.0 credits in vocational courses as compared with 4.4 credits earned by graduates from medium-sized schools (501 to 1,800 students), and 4.0 credits earned by graduates from large schools (enrollments over 1,800). These differences appear to be largely due to the varying number of exploratory vocational credits earned.

Coursework Participation by Different Types of Students

A look at selected student characteristics reveals some differences in the extent to which students participated in vocational education. These differences varied by self-reported high school program, racial/ethnic group, socioeconomic status (SES), and performance group. As would be expected, public school graduates who said they were enrolled in a vocational program earned more credits in vocational education (6.5) than graduates in academic or general programs of study (2.7 and 4.6 credits, respectively) (entry 3.3). The average vocational graduate earned almost twice as many occupational credits than the average general program graduate and over three times as many as the average academic program graduate. Vocational graduates also earned more credit in exploratory courses than graduates in academic or general programs of study. However, exploratory vocational credits made up a higher proportion of the total average vocational credits earned by both academic and general program graduates (59 percent for each group) than by the average vocational program graduate (43 percent).

Hispanic graduates of public high schools earned more credits in vocational education than did their black or white counterparts, 5.0 credits vs. 4.5 and 4.3, respectively. These differences were due largely to the higher participation by Hispanic students in exploratory vocational education courses.

Public school graduates of lower socioeconomic status (SES) and those with lower cognitive test scores tended to earn more vocational credits than those of higher SES and in higher test groups. The average graduate scoring in the lowest cognitive test quartile earned more credits in both exploratory and occupational vocational education than did the average graduate in the middle and higher performance groups.

The data also show the amount of coursework taken in each of the specific vocational subject matter areas by male and female high school students in each of the three curricular programs. Based on the average number of vocational credits taken, males and females in academic and general high school programs took more exploratory than occupational vocational courses. The opposite was true, however, for students in vocational programs, where more occupational vocational coursework was taken by both males and females. Overall, female students took slightly more occupational vocational courses than males, but males took more exploratory vocational courses (entry 3.4). More specifically, in all curricular groups, females tended to earn more credits than males in both occupational and exploratory business courses. And, regardless of curricular area, males averaged more credits than females in industrial arts and occupational trades and industry courses. In the vocational program particularly, males earned two-thirds of their total vocational credit in trade and industrial and industrial arts courses, while females earned only about 12 percent of their total vocational credit in these areas. By contrast, three-fourths of the vocational credits earned by female vocational students were in business and home economics.

Participation in Vocational Specialties

Tabulations showing self-reported vocational program specialty reveal further differences in coursetaking among vocational program students. As would be expected, vocational students who specialized in one of the seven specific vocational areas earned more credits in that particular area than did vocational students who had specialized in some other area (entry 3.5). Not all vocational coursework, however, was taken in the specific area of specialization, nor could all even be considered occupational. For example, graduates who described

themselves as being in an agriculture program earned about as many credits in trade and industrial courses as they did in agriculture courses. Graduates of programs that they described as technical earned more units in trade and industry and industrial arts courses than in technical courses.

Employment, by Secondary Vocational Education Pattern

The short-term outcomes of secondary vocational education might be measured by the types of jobs held by graduates from these programs. Such an examination was included in the National Longitudinal Survey of Labor Market Experiences, the Youth Cohort, conducted by the National Center for Research in Vocational Education. The study looked at the most recent job of 17- to 21-year-old high school graduates in May 1980. This sample included only those graduates who worked during the previous year, described in greater detail in the Data Sources of the Appendix. This study defined vocational and nonvocational students according to their high school transcripts. Only students who had taken no secondary vocational coursework were classified as "nonvocational." Students who had taken at least some vocational coursework while in high school were further classified by the extent of their participation. Five patterns of participation were constructed based on the amount, timing, and degree of specialization of the vocational coursetaking. Each student was assigned to the pattern to which he or she fit best. Approximately one-third of the sample could not be classified because of incomplete transcripts.

According to the study, about one-fifth of all male graduates worked as operatives in their most recent job following high school (entry 3.6). Among females, by far the most common job was in clerical occupations (44 percent), followed by service occupations (24 percent).

Although the distributions of most recent jobs held were generally similar for graduates with limited vocational education and those with none, striking differences were apparent when comparing vocational concentrators and nonvocational students. It should be remembered, however, that in this context, nonvocational students were considered to be only those who had taken no high school vocational coursework.

Among males, twice as many vocational concentrators as nonvocational graduates worked in craft occupations. The figures were 33 percent for vocational concentrators and 15 percent for nonvocational graduates. Further, only half as many male vocational concentrators as nonvocational graduates, proportionately, worked in professional/technical, clerical, or service jobs.

Among females, 61 percent of vocational concentrators worked in clerical occupations, whereas 37 percent of nonvocational graduates did. Nearly 20 percent of the female nonvocational graduates held professional/technical jobs, compared with only 2 percent of vocational concentrators. Greater percentages of female nonvocational graduates than vocational concentrators worked in sales and service jobs, and fewer female nonvocational graduates held jobs in operative occupations.

Postsecondary Vocational Education

Postsecondary Education Participation, by Secondary Vocational Education Pattern

There is evidence that many high school vocational graduates continue their education after graduation, although not at the rates of other graduates. Data from the National Center for Research in Vocational Education show the subsequent postsecondary participation of recent high school graduates in relation to their secondary vocational education participation pattern. Again, the designation of "nonvocational" was used only for students who had taken no vocational coursework while in high school.

The data show distinct differences among the students classified by their pattern of vocational participation. In general, as the level of participation in secondary vocational education increased, the likelihood of enrollment in postsecondary education decreased. Over two-fifths (44 percent) of the graduates classified as vocational concentrators did not obtain any type of postsecondary

education in the years following high school graduation (entry 3.7). These were the high school vocational students who had taken intensive coursework to prepare for immediate employment in a specific occupational field. When they did choose postsecondary education, vocational concentrators were more likely than those with less vocational coursework to attend training programs or institutes. Graduates with progressively less exposure to occupational preparatory courses in high school had an increasingly greater likelihood of taking some type of postsecondary education. Among graduates with the least exposure to vocational education, i.e., those whose vocational coursetaking was described as incidental/personal, nearly half (48 percent) attended a 4-year postsecondary institution, almost the rate for nonvocational graduates in general. The choice of a 2-year institution was made about equally often by all the groups, with about a fifth of each choosing this postsecondary option. Enrollment in postsecondary education also was associated with high school performance. Graduates of higher class rank were the most likely to continue their education, regardless of their secondary vocational experience.

Vocational Education Participants in College

To obtain a clearer picture of postsecondary vocational education, it is useful to look at characteristics of those who pursue such training. Data from the October 1982 Current Population Survey show the number and composition of participants enrolled for vocational certification or credit in postsecondary education, as offered by collegiate and noncollegiate providers. These data may not include participants enrolled for licensing.

Persons enrolled in college were considered to be in vocational programs if they were working toward a vocational certificate, associate occupational degree, or other award based on an occupational curriculum. Data on this group, as well as on participants in noncollegiate programs, were disaggregated by sex, age group, race, and labor force status. Of the 2 million college students enrolled for occupational credit, more than half (58 percent) were female (entry 3.8). Among blacks, the proportion of females was higher than among whites (69 vs. 57 percent). Three-fifths of all college enrollees working for occupational credit were between 16 and 24 years of age, and an additional 26 percent were 25 to 34 years old. The number in college for occupational credit showed a sharp and steady decline beyond the age of 35, with fewer than 5 percent over 44 years old.

Overall, persons enrolled in college for vocational credit were about equally likely to be employed full-time as to be employed part-time or out of the labor force (32, 29, and 29 percent for each group, respectively). Less than 10 percent of all such persons were unemployed. There were, however, distinct differences in the labor force participation of males and females among these college enrollees. Males enrolled in college and working for occupational credentials were more likely to be employed full-time (40 percent) than to be out of the labor force (23 percent). Their female counterparts, however, were more likely to be out of the labor force (34 percent) than to be employed full-time (26 percent). Twenty-seven percent of males and 31 percent of females working for vocational credentials in college were employed part-time.

Vocational Education Participants Outside of College

Another segment of postsecondary vocational education involves training for vocational certification provided by schools or programs outside of college. The noncollegiate providers identified by the survey included vocational, trade, technical, business, or commercial schools, as well as business or industry, labor, community organizations, and government. About 1.3 million persons were taking coursework in noncollegiate environments in October of 1982, according to the survey, and again the majority (54 percent) was female (entry 3.9).

The National Center for Research in Vocational Education, Ohio State University, *Postsecondary Experiences of Students with Varying Participation in Secondary Vocational Education*, January 1982.

The age distribution of these postsecondary vocational participants is somewhat different from that in collegiate institutions. Participants 25 and older made up the majority. This indicates a slightly older population than students working for occupational credit in college. It suggests further that participants in the noncollegiate sector may be at a different stage in their careers. And, in fact, these participants generally were more involved in the labor force than the collegiate population.

Within this group of participants, about half were working full-time, a fourth were out of the labor force, and less than one-seventh were working part-time. Differences in the labor force status of males and females in this participant group were again apparent. Nearly two-thirds of the male participants were employed full-time, whereas less than half of the females were. Females were more likely than males to be out of the labor force (29 vs. 18 percent) while taking vocational courses in noncollegiate environments.

Table 3.1

Employment, by Major Occupational Group: Actual 1982 and Alternate Projections for 1995

Occupational Group	1982	1995		
		Low Trend	Moderate Trend	High Trend
	Number, in Thousands			
All occupations	101.510	124.846	127.110	129.902
White-collar workers	52.132	65.621	66.756	68.241
Professional and technical workers	16.584	21.545	21.775	22.325
Managers and administrators	9.532	12.008	12.212	12.467
Sales workers	6.967	8.535	8.771	8.911
Clerical workers	19.049	23.533	23.998	24.538
Blue-collar workers	30.447	36.404	37.240	38.123
Craft and related workers	11.591	14.476	14.769	15.099
Operatives	12.995	15.044	15.419	15.809
Laborers, except farm	5.861	6.884	7.052	7.215
Service workers	16.241	20.416	20.706	21.113
Farm workers	2.691	2.404	2.407	2.424
	Percentage Distribution			
All occupations	**100.0**	100.0	**100.0**	100.0
White-collar workers	**51.4**	52.6	**52.5**	52.5
Professional and technical workers	16.3	17.3	17.1	17.2
Managers and administrators	9.4	9.6	9.6	9.6
Sales workers	6.9	6.8	6.9	6.9
Clerical workers	18.8	18.8	18.9	18.9
Blue-collar workers	**30.0**	29.2	**29.3**	29.3
Craft and related workers	11.4	11.6	11.6	11.6
Operatives	12.8	12.1	12.1	12.2
Laborers, except farm	5.8	5.5	5.5	5.6
Service workers	**16.0**	16.4	**16.3**	16.3
Farm workers	**2.7**	1.9	**1.9**	1.9
	Percent Change in Employment, 1982 to 1995			
All occupations	—	23	**25**	28
White-collar workers	—	26	**28**	31
Professional and technical workers	—	30	31	35
Managers and administrators	—	26	28	31
Sales workers	—	23	26	28
Clerical workers	—	24	26	29
Blue-collar workers	—	20	**22**	25
Craft and related workers	—	25	27	30
Operatives	—	16	19	22
Laborers, except farm	—	17	20	23
Service workers	—	26	**27**	30
Farm workers	—	11	**–11**	10

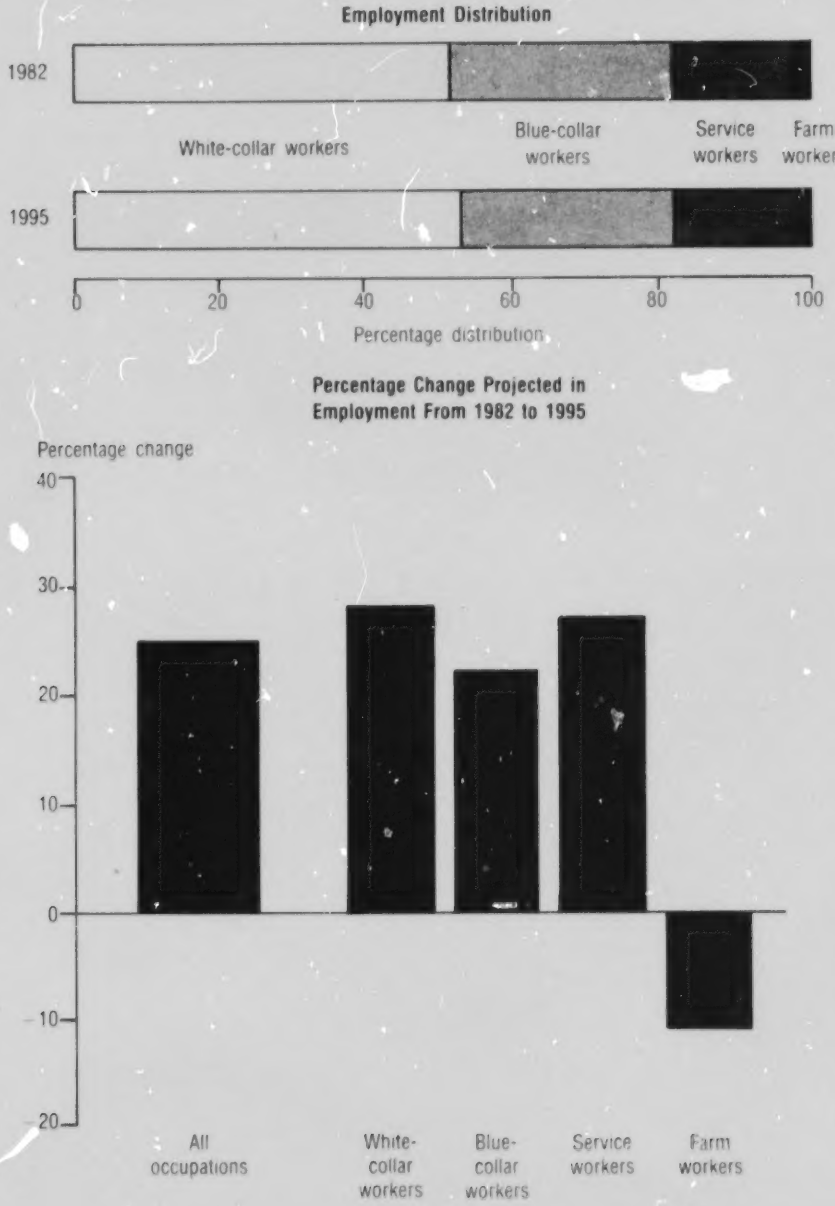
— Not applicable.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Monthly Labor Review*, November 1983.

Chart 3.1

Actual 1982 and Projected 1995 Employment and Change Projected in Employment From 1982 to 1995



The distribution of employment by major occupational group is expected to remain about the same between 1982 and 1995. Employment is expected to rise for all these groups except farm laborers.

Table 3.2

Average Number of Carnegie Units Earned in Vocational Education Courses by All 1982 High School Graduates, by Control of School, and by 1982 Public High School Graduates, by Region, Metropolitan Status, and School Enrollment Size: 1982

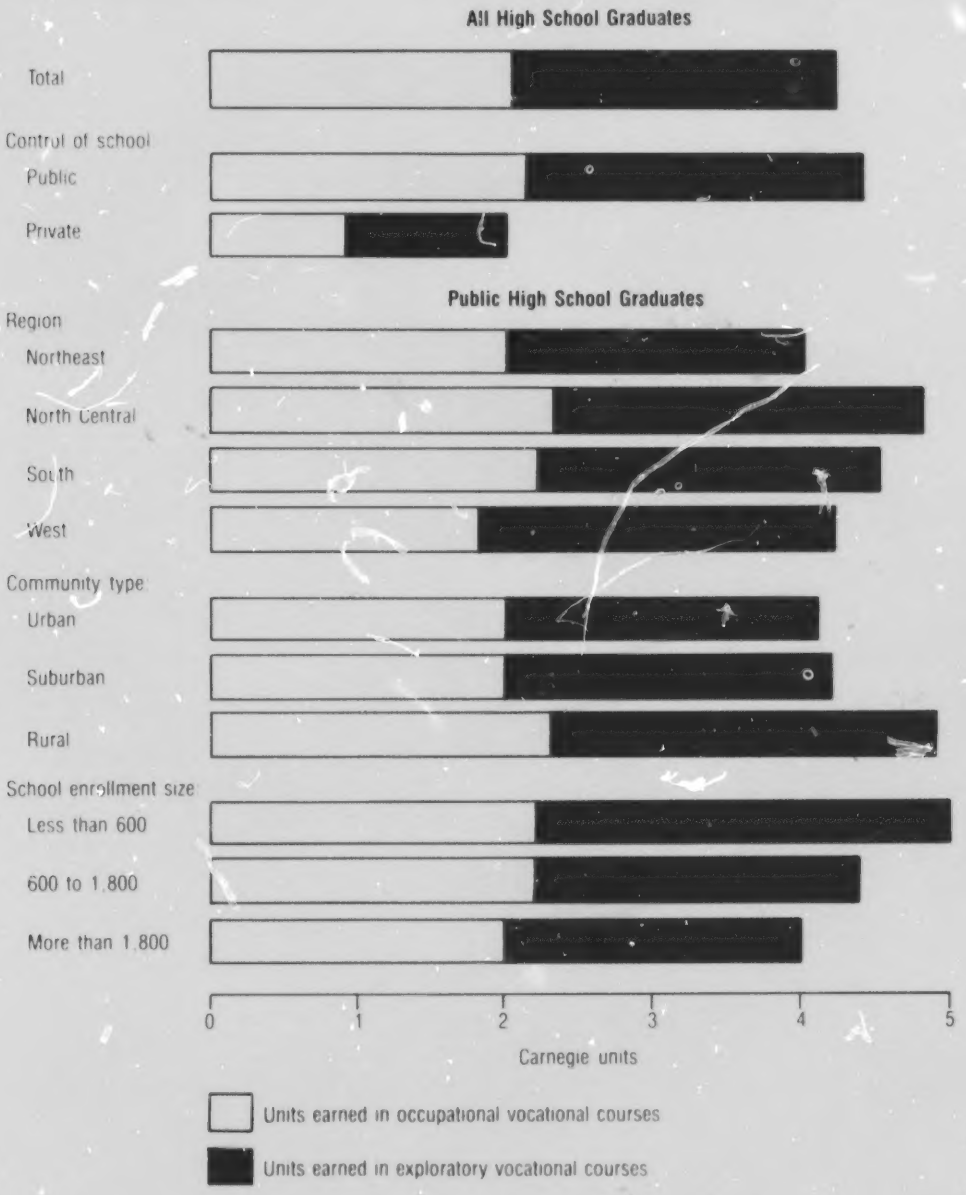
Characteristic	Average Units Earned in All Courses	Average Units Earned in Vocational Courses			Percent Exploratory	Sample Size
		Total	Occupational	Exploratory		
All high school graduates						
Control of school:						
Total	21.8	4.2	2.0	2.2	52	12,292
Public	21.6	4.4	2.1	2.3	52	9,295
Private	23.1	2.0	.9	1.1	55	2,847
Public high school graduates						
Region:						
Northeast	21.9	4.0	2.0	1.9	48	1,921
North Central	21.2	4.8	2.3	2.6	54	2,619
South	21.5	4.5	2.2	2.3	51	2,844
West	22.3	4.2	1.5	2.4	57	1,911
Metropolitan status:						
Urban	21.1	4.1	2.0	2.0	49	2,108
Suburban	21.9	4.2	2.0	2.2	52	4,386
Rural	21.6	4.9	2.3	2.6	53	2,801
School enrollment size:						
Less than 600	21.4	5.0	2.2	2.8	56	1,439
600 to 1,800	21.6	4.4	2.2	2.3	52	4,564
Over 1,800	21.9	4.0	2.0	2.0	50	2,520

NOTE: A description of the areas that included vocational coursework is provided in the Data Sources in the Appendix. Occupational vocational courses prepare participants for specific vocational occupations; exploratory vocational courses typically provide an introduction to or overview of a particular subject area. For example, Typing I was considered to be exploratory, while Typing II was classified as occupational. The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course. The regions and metropolitan status categories correspond to Bureau of the Census definitions. Definitions are provided in the Definitions of Selected Terms in the Appendix. Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Study, transcript file, unpublished tabulations (January 1983).

Chart 3.2

Average Units Earned in Vocational Courses by 1982 High School Graduates



The average public high school graduate earned twice as many credits in vocational education as did the average private school student. Greater vocational participation was associated with smaller schools and schools set in rural communities.

Table 3.3

Average Number of Carnegie Units Earned in Vocational Education Courses by 1982 Public High School Graduates, by Racial/Ethnic Group, Self-Reported High School Program, Standardized Test Performance Group, and Socioeconomic Status (SES): 1982

Characteristic	Average Units Earned in All Courses	Average Units Earned in Vocational Courses			Percent Exploratory	Sample Size
		Total	Occupational	Exploratory		
Total	21.6	**4.4**	**2.1**	**2.3**	52	9,295
Racial/ethnic group						
White, non-Hispanic	21.7	**4.3**	**2.1**	**2.2**	51	5,515
Black, non-Hispanic	21.0	**4.5**	**2.2**	**2.4**	53	1,295
Hispanic	21.5	**5.0**	**2.3**	**2.7**	54	1,964
Self-reported high school program*						
Academic	22.3	2.7	1.1	1.6	59	3,322
Male	22.3	2.8	1.1	1.7	61	1,591
Female	22.4	2.7	1.2	1.5	56	1,731
General	21.2	4.6	1.9	2.7	59	3,182
Male	20.9	4.5	1.8	2.7	60	1,654
Female	21.6	4.7	2.0	2.7	57	1,528
Vocational	21.4	6.5	3.7	2.8	43	2,503
Male	21.1	6.3	3.3	3.0	48	1,164
Female	21.6	6.6	4.0	2.6	39	1,339
Standardized test performance group						
Low	20.9	**5.4**	**2.6**	**2.8**	52	1,843
Middle	21.6	**4.9**	**2.4**	**2.5**	51	4,010
High	22.5	**2.9**	**1.3**	**1.6**	55	2,148
SES						
Low	21.2	**5.2**	**2.5**	**2.7**	52	2,285
Middle	21.7	**4.7**	**2.2**	**2.4**	51	4,084
High	22.1	**3.0**	**1.4**	**1.6**	53	1,836

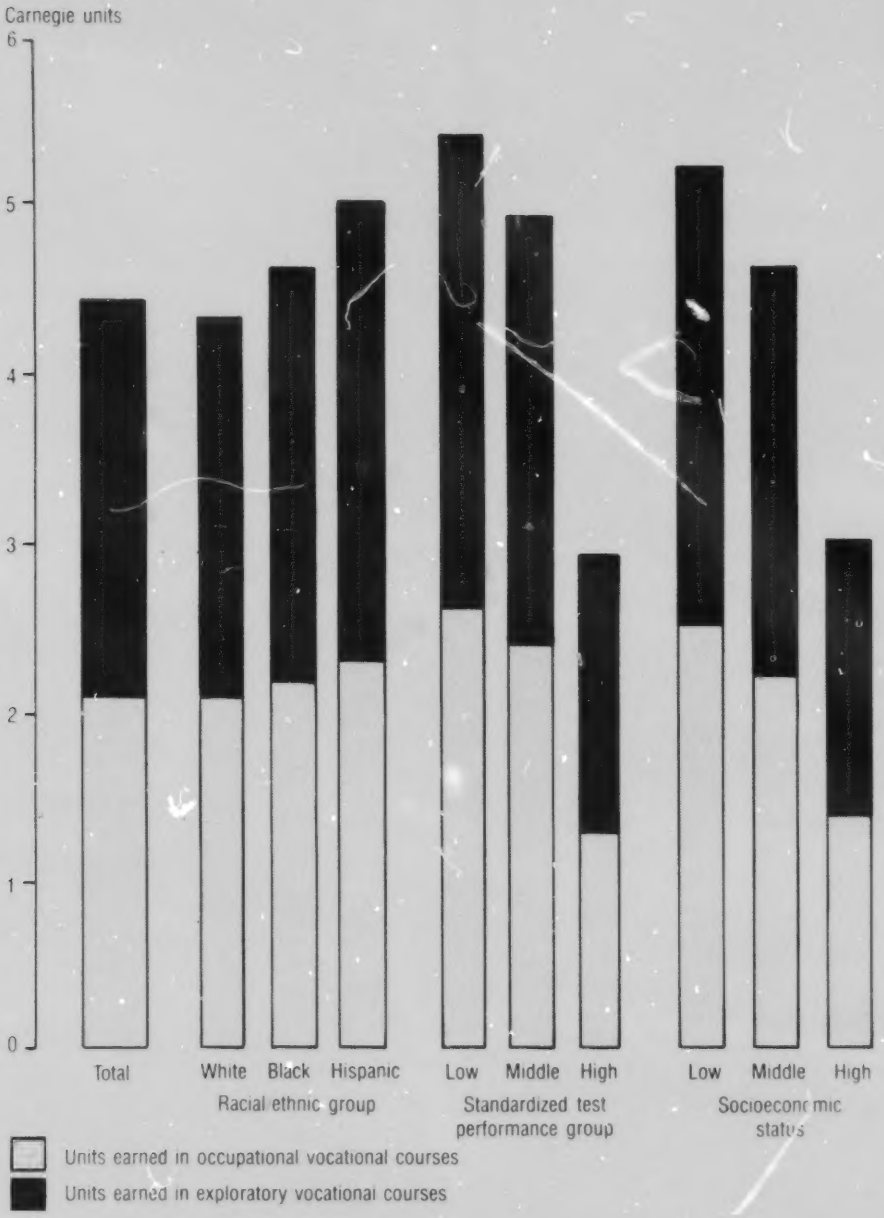
*Students were asked, "Which one of the following best describes your present high school program?" The possible answer choices were academic, general, and the seven vocational specialties (see the Definitions of Selected Terms in the Appendix). Some students may not have identified their high school program properly.

NOTE: A description of the areas that included vocational coursework is provided in the Data Sources in the Appendix. Occupational vocational courses prepare participants for specific vocational occupations; exploratory vocational courses typically provide an introduction to or overview of a particular subject area. For example, Typing I was considered to be exploratory, while Typing II was classified as occupational. The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course. Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Study, transcript file, unpublished tabulations (January 1983).

Chart 3.3

Average Units Earned in Vocational Courses by 1982 Public High School Graduates, by Racial/Ethnic and Standardized Test Performance Group, and by Socioeconomic Status



The average Hispanic graduate earned more vocational credits than did blacks or whites, 5.0 units compared with 4.5 units and 4.3 units, respectively. Greater vocational participation was associated with low standard test performance and low socioeconomic status.

Table 3.4

Average Number of Carnegie Units Earned in Selected Vocational Courses by 1982 Public High School Graduates, by Self-Reported High School Program and Sex: 1982

Vocational Courses	All Programs	Self-Reported High School Program[1]								
		Academic			General			Vocational		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
	Average Carnegie Units									
All vocational	4.4	**2.7**	2.8	2.7	**4.6**	4.5	4.7	**6.5**	6.3	6.6
Occupational vocational	2.1	**1.1**	1.1	1.2	**1.9**	1.8	2.0	**3.7**	3.3	4.0
Agriculture	.2	**.1**	.1	(2)	**.2**	.3	.1	**.3**	.6	.1
Business	.9	**.5**	.3	.7	**.8**	.4	1.3	**1.6**	.4	2.6
Marketing	.2	**.1**	.1	.1	**.1**	.1	.1	**.3**	.3	.3
Technical	.1	**.1**	.1	.1	**.1**	.1	.1	**.1**	.1	.1
Health	(2)	**(2)**	(2)	(2)	**(2)**	(2)	.1	**.1**	(2)	.1
Trade and industrial	.6	**.3**	.4	.1	**.6**	.8	.3	**1.1**	2.0	.5
Vocational home economics	.1	**(2)**	(2)	.1	**.1**	.1	.2	**.1**	(2)	.2
Exploratory vocational	2.3	**1.6**	1.7	1.5	**2.7**	2.7	2.7	**2.8**	3.0	2.6
Agriculture	(2)	**(2)**	(2)	(2)	**(2)**	(2)	(2)	**(2)**	.1	(2)
Business	.7	**.6**	.5	.7	**.7**	.5	.9	**.8**	.4	1.1
Marketing	(2)	**(2)**	(2)	(2)	**(2)**	(2)	(2)	**(2)**	(2)	(2)
Trade and industrial	.2	**.1**	.1	.1	**.2**	.2	.2	**.2**	.4	.2
Consumer and homemaking	.7	**.4**	.2	.6	**.9**	.4	1.4	**.8**	.3	1.2
Industrial arts	.7	**.5**	.9	.1	**.9**	1.5	.2	**.9**	1.8	.1
Sample size	9,295	3,182	1,654	1,528	3,322	1,591	1,731	2,503	1,164	1,339

[1] Students were asked "Which one of the following best describes your present high school program?" The possible answer choices were academic, general, and the seven vocational specialties (see the Definitions of Selected Terms in the Appendix). Some students may not have identified their high school program properly.

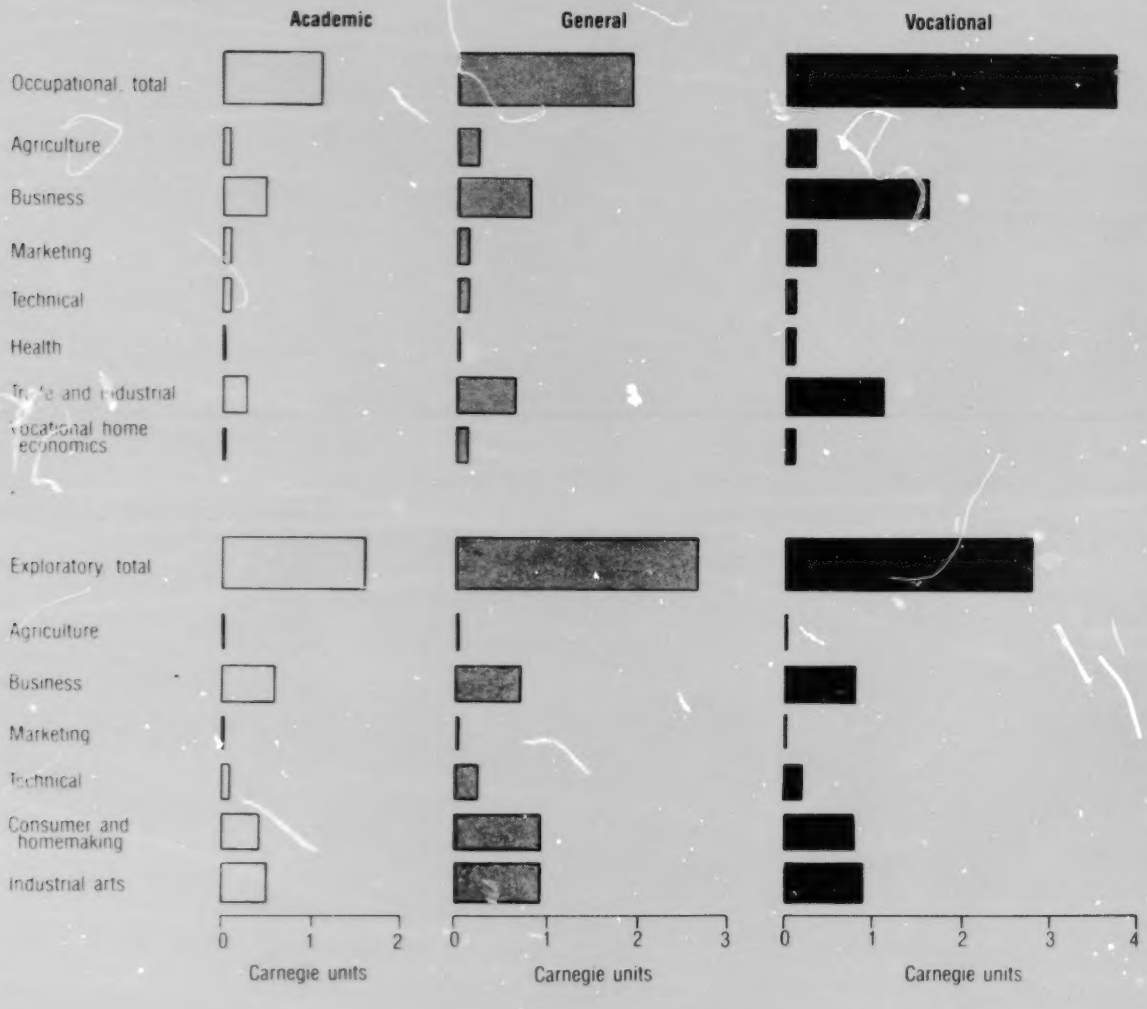
[2] Less than 0.05.

NOTE: A description of the areas that included vocational coursework is provided in the Data Sources in the Appendix. Occupational vocational courses prepare participants for specific vocational occupations; exploratory vocational courses typically provide an introduction to or overview of a particular subject area. For example, Typing I was considered to be exploratory, while Typing II was classified as occupational. The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course. Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Study, transcript file, unpublished tabulations (January 1983).

Chart 3.4

Average Units Earned by 1982 Public High School Graduates in Selected Vocational Courses, by Self-Reported High School Program



High school graduates took vocational education most frequently in business courses. They did so regardless of program, except for male vocational graduates, who took more coursework in trade and industry.

Table 3.5

Average Number of Carnegie Units Earned in Selected Vocational Courses by 1982 Public High School Graduates Who Reported a Vocational Specialty: 1982

Vocational Courses	Self-Reported Vocational Specialty							
	Total Vocational	Agriculture	Business	Distribution	Health	Home Economics	Technical	Trade and Industrial
	Average Carnegie Units							
All vocational	6.5	7.0	6.7	5.9	5.2	6.0	5.9	6.6
Total occupational	3.7	4.3	4.1	3.5	2.8	1.9	2.9	3.5
Total exploratory	2.8	2.6	2.6	2.4	2.4	4.1	3.0	3.1
Agriculture	.3	2.0	.1	.1	.1	(*)	.3	.2
Business	2.4	.9	4.5	1.6	1.2	1.4	.6	.6
Marketing	.3	.2	.2	2.0	.1	.2	.2	.1
Technical	.1	(*)	.2	(*)	(*)	.1	.4	(*)
Health	.1	.1	(*)	(*)	1.2	(*)	.1	(*)
Trade and industrial	1.4	.9	.5	.7	.6	.5	1.9	3.2
Vocational home economics	.1	.2	.1	.1	.3	.6	.2	.1
Consumer and homemaking	.8	.6	.9	.8	1.4	2.8	.4	.4
Industrial arts	.9	1.0	.2	.6	.2	.3	1.9	2.0
Sample size	2,503	282	1,017	182	118	144	223	537

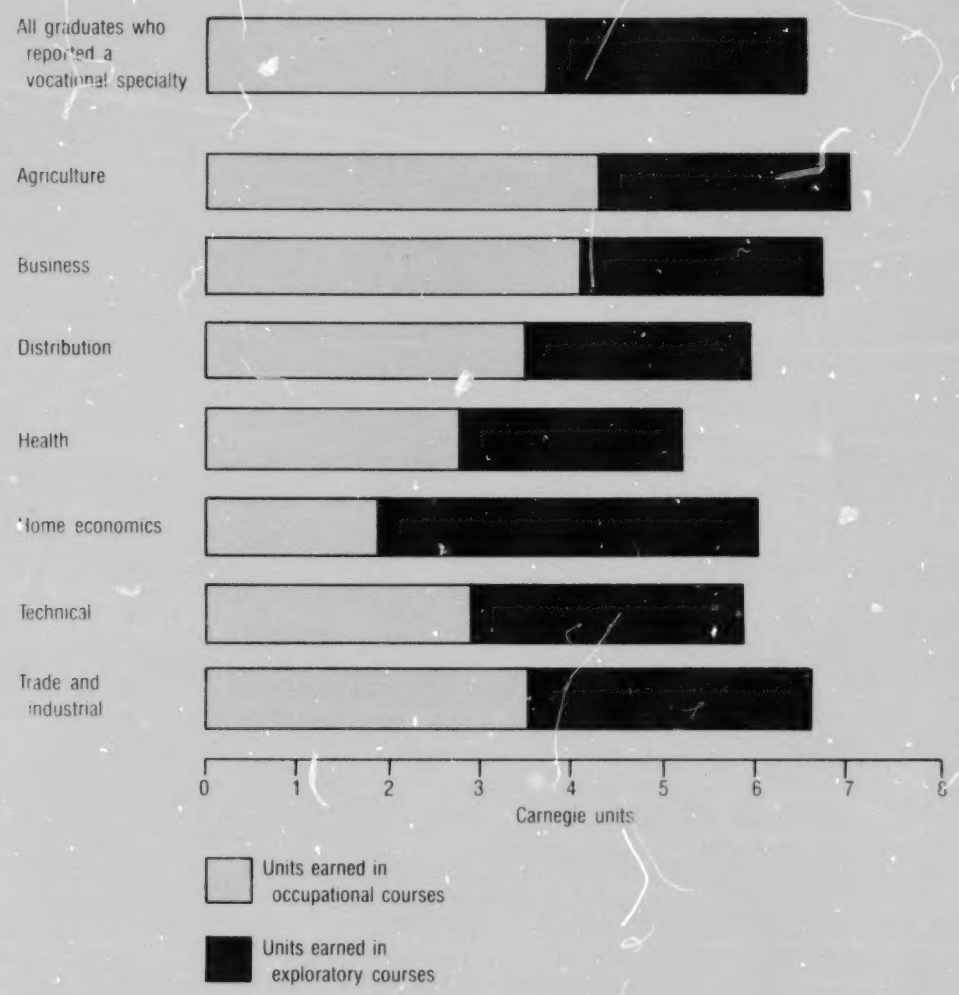
*Less than 0.05

NOTE: A description of the areas that included vocational coursework is provided in the Data Sources in the Appendix. Occupational vocational courses prepare participants for specific vocational occupations; exploratory vocational courses typically provide an introduction to or overview of a particular subject area. For example, Typing I was considered to be exploratory, while Typing II was classified as occupational. The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course. Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Study, transcript file, unpublished tabulations (January 1983).

Chart 3.5

Average Occupational and Exploratory Vocational Units Earned by 1982 Public High School Graduates Who Reported a Vocational Specialty



Even graduates with vocational specialties took exploratory coursework and vocational coursework outside of their occupational areas.

Table 3.6

Occupational Classification of Most Recent Job of 17- to 21-Year-Old High School Graduates,[1] by Secondary Vocational Education Participation Pattern and Sex: May 1980

Sex and Occupation	Total	Secondary Vocational Education Participation Pattern						
		Concentrator	Limited Concentrator	Concentrator Explorer	Explorer[2]	Incidental Personal	Non-vocational	Incomplete Transcript
		Percentage Distribution						
Males, all occupations	**100.0**	**100.0**	100.0	100.0	100.0	100.0	100.0	100.0
Professional and technical	**8.2**	**5.7**	7.8	9	5.1	9.1	10.2	8.3
Managerial	**4.9**	**6.6**	4.0	3.2	0.0	5.4	5.0	4.9
Sales	**4.9**	**5.5**	4.9	5.0	9.7	5.0	7.2	3.1
Clerical	**11.4**	**6.8**	10.5	17.3	.0	11.9	13.7	10.2
Crafts	**19.2**	**32.5**	24.3	24.7	9.7	15.9	14.8	19.7
Operatives	**21.2**	**17.5**	20.9	19.1	40.2	21.0	21.6	21.7
Laborers	**13.8**	**12.3**	15.4	14.6	3.8	14.6	11.0	14.7
Farmers and farm managers	**.4**	**3.1**	.8	.0	0	.1	.0	.5
Farm laborers	**1.8**	**3.7**	1.8	2.9	5.3	2.0	.3	1.6
Service	**14.0**	**6.4**	9.6	12.3	26.3	15.2	15.6	14.8
Household service	**.1**	**.0**	.0	.0	.0	.0	.0	.4
Sample size	1,923	115	200	99	19	508	368	614
Females, all occupations	**100.0**	**100.0**	100.0	100.0	100.0	100.0	100.0	100.0
Professional and technical	**7.3**	**2.3**	4.8	3.8	.0	7.4	19.8	7.3
Managerial	**3.5**	**4.5**	3.4	4.4	0	4.1	3.6	2.5
Sales	**7.2**	**5.4**	6.6	10.7	9.9	6.5	10.9	6.2
Clerical	**43.7**	**60.8**	53.3	38.9	33.5	40.0	36.8	41.2
Crafts	**1.1**	**.0**	.3	3.1	0	.4	.0	2.1
Operatives	**9.4**	**10.0**	6.3	13.6	28.7	6.8	4.6	12.1
Laborers	**1.9**	**1.7**	2.9	.9	0	2.7	.1	1.8
Farmers and farm managers	**.0**	**.0**	0	0	0	.9	.0	0
Farm laborers	**.3**	**.9**	.6	.8	0	.0	.0	.3
Service	**24.0**	**14.1**	21.0	23.7	28.0	30.1	23.2	23.7
Household service	**1.7**	**.3**	.8	.3	0	2.0	1.1	2.9
Sample size	2,136	195	307	193	26	520	207	688

[1] High school transcripts were obtained in May of 1980 for a subsample of 17- to 21-year-old high school graduates who had been employed during the previous year. This subsample included civilian respondents for whom course information for grades 9 through 12 was available. A case was eliminated from the subsample if a respondent was not interviewed in 1980, was serving in the military, had completed less than 12 years of schooling, or had an incomplete transcript.

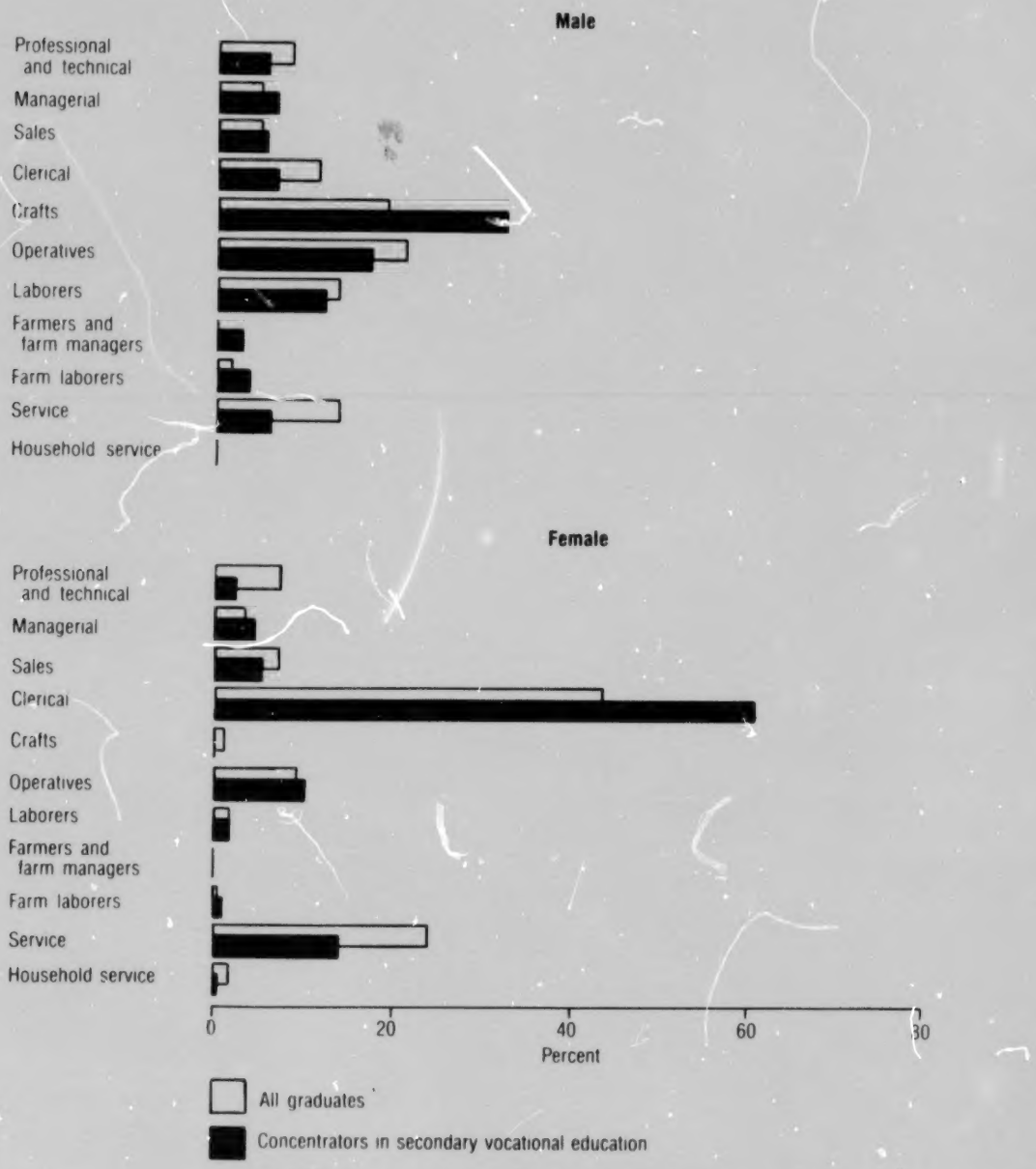
[2] Care should be taken when making comparisons with the "Explorer" category, as sample sizes are small.

NOTE: The National Center for Research in Vocational Education profiles secondary students according to the following five patterns of vocational education participation: 1) Concentrator; 2) Limited Concentrator; 3) Concentrator Explorer; 4) Explorer; and 5) Incidental Personal. For a more detailed description of these five patterns, refer to the Definitions of Selected Terms in the Appendix. Details may not add to totals because of rounding.

SOURCE: The Ohio State University, National Center for Research in Vocational Education. *Influences of High School Curriculum on Determinants of Labor Market Experiences*, 1982.

Chart 3.6

Occupational Classification of Most Recent Job of 17- to 21-Year-Old High School Graduates



Among high school graduates who were working, males with concentrated vocational training were more likely than other male graduates to be working in craft occupations. Females with vocational concentrations were more likely than females in general to hold clerical jobs.

Table 3.7

Postsecondary Education Participation of 17- to 21-Year-Old High School Graduates,[1] by Secondary Vocational Education Participation Pattern: May 1980

Type of Postsecondary Education	Total	Secondary Vocational Education Participation Pattern					
		Concentrator	Limited Concentrator	Concentrator Explorer	Explorer[2]	Incidental Personal	Non-vocational
		Percentage Distribution					
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No postsecondary	29.5	43.7	35.6	37.5	34.8	24.6	22.1
Training program or institute	11.3	27.7	17.8	10.9	13.6	8.3	6.7
2-year institution	18.9	17.0	20.0	21.5	29.3	19.1	16.9
4-year institution	40.2	18.6	26.6	30.1	22.3	48.1	54.3
Sample size	3,054	327	550	315	43	1,148	672

[1]High school transcripts were obtained for a subsample of 17- to 21-year-old high school graduates in May of 1980. This subsample included civilian respondents for whom course information for grades 9 through 12 was available. A case was eliminated from the subsample if a respondent was not interviewed in 1980, was serving in the military, had completed less than 12 years of schooling, or had an incomplete transcript.

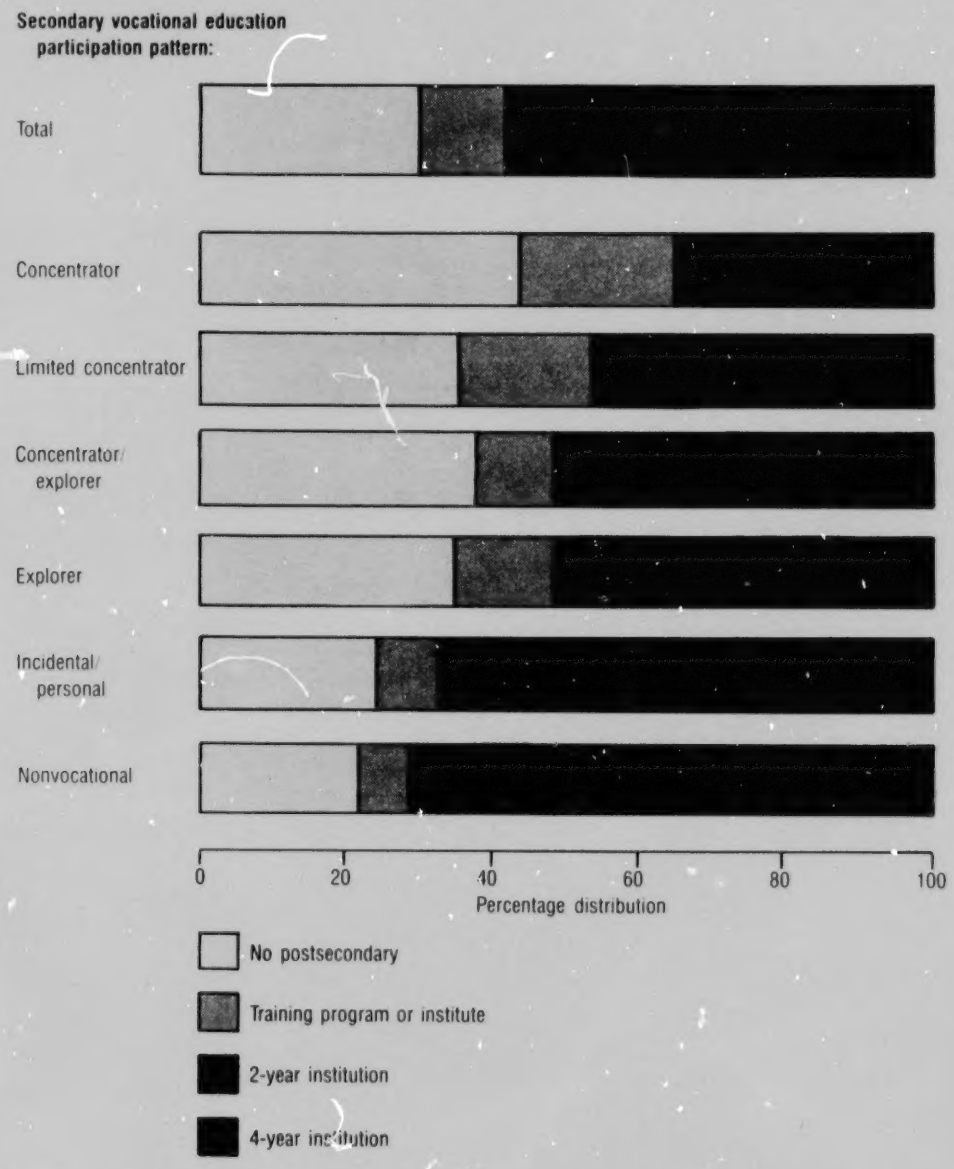
[2]Care should be taken when making comparisons with the "Explorer" category, as the sample size is small.

NOTE: The National Center for Research in Vocational Education profiles secondary students according to the following five patterns of vocational education participation: 1) Concentrator, 2) Limited Concentrator, 3) Concentrator Explorer, 4) Explorer, and 5) Incidental Personal. For a more detailed description of these five patterns, refer to the Definitions of Selected Terms in the Appendix. Details may not add to totals because of rounding.

SOURCE: The Ohio State University, National Center for Research in Vocational Education. *Postsecondary Experiences of Students with Varying Participation in Secondary Vocational Education*, 1982.

Chart 3.7

Postsecondary School Enrollment of 17- to 21-Year-Old High School Graduates



High school graduates with concentrated vocational training were less likely than other graduates to go on to postsecondary education in the years immediately following graduation. When they did, they were more likely than others to go to a technical training institute.

Table 3.8

Distribution of Persons Enrolled in College and Working Toward a Vocational Certificate, Associate Occupational Degree, or Other Award Based on Occupational Curriculum, by Sex, Age Group, Race, and Labor Force Status: October 1982

Characteristic	Number, in Thousands	Percentage Distribution			Females as Percent of Total
		Total	Male	Female	
Age group, total	2,006	100.0	100.0	100.0	57.6
16 to 24 years old	1,215	60.6	61.0	60.3	57.6
25 to 34 years old	525	26.2	28.4	24.6	54.3
35 to 44 years old	187	9.3	7.3	10.8	66.9
45 to 54 years old	64	3.2	3.0	3.4	(*)
55 years old and over	13	.7	.2	1.0	(*)
Race, total	2,006	100.0	100.0	100.0	57.6
White	1,686	84.1	86.3	82.5	56.8
Black	250	12.5	9.2	14.8	68.8
Other	69	3.4	4.5	2.7	(*)
Labor force status, total	2,006	100.0	100.0	100.0	57.6
Not in labor force	590	29.4	23.1	34.0	67.0
Employed full time	640	31.9	39.7	26.3	47.6
Employed part-time	589	29.3	27.0	31.1	61.3
Unemployed	186	9.3	10.2	8.6	53.5

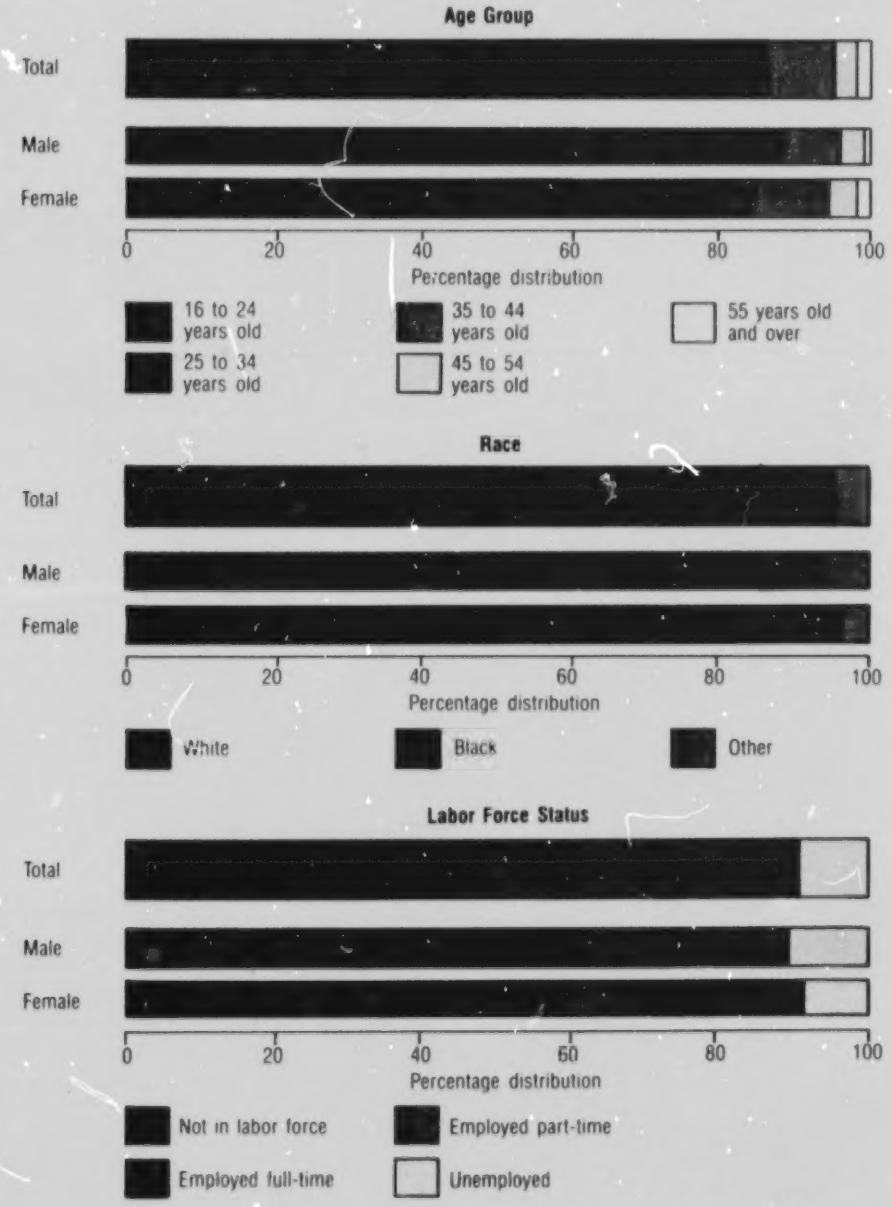
*Base less than 75,000.

NOTE: Definitions for labor force categories may be found in the Definitions of Selected Terms in the Appendix. Details may not add to totals because of rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1982, unpublished tabulations (September 1983).

Chart 3.8

Persons Enrolled in College and Working Toward a Vocational Certificate, Associate Occupational Degree, or Other Award Based on Occupational Curriculum



The greatest percentage of females enrolled in college for vocational credit were not in the labor force, while male participants were most likely to be employed full-time.

Table 3.9

Distribution of Persons Taking Courses in a Noncollegiate Environment[1] for a Vocational Certificate or Diploma, by Sex, Age Group, Race, and Labor Force Status: October 1982

Characteristic	Number, in Thousands	Percentage Distribution			Females as Percent of Total
		Total	Male	Female	
Age group, total	1,306	100.0	100.0	100.0	53.5
24 years old and under	504	38.6	38.7	38.5	53.4
25 to 34 years old	383	29.4	30.4	28.4	51.8
35 to 44 years old	234	18.0	16.8	18.9	56.4
45 to 54 years old	117	9.0	8.2	9.7	57.7
55 years old and over	66	5.1	5.9	4.4	(2)
Race, total	1,306	100.0	100.0	100.0	53.5
White	1,079	82.6	84.2	81.2	52.6
Black	172	13.2	11.0	15.1	61.2
Other	55	4.2	4.8	3.7	(2)
Labor force status, total	1,306	100.0	100.0	100.0	53.5
Not in labor force	309	23.6	17.5	29.0	65.6
Employed full-time	694	53.2	63.0	44.6	44.8
Employed part-time	192	14.5	12.0	16.7	61.3
Unemployed	113	8.7	7.4	9.7	60.1

[1]Noncollegiate providers included vocational, trade, technical, business or commercial schools, and private business or industry, community organizations, and government.

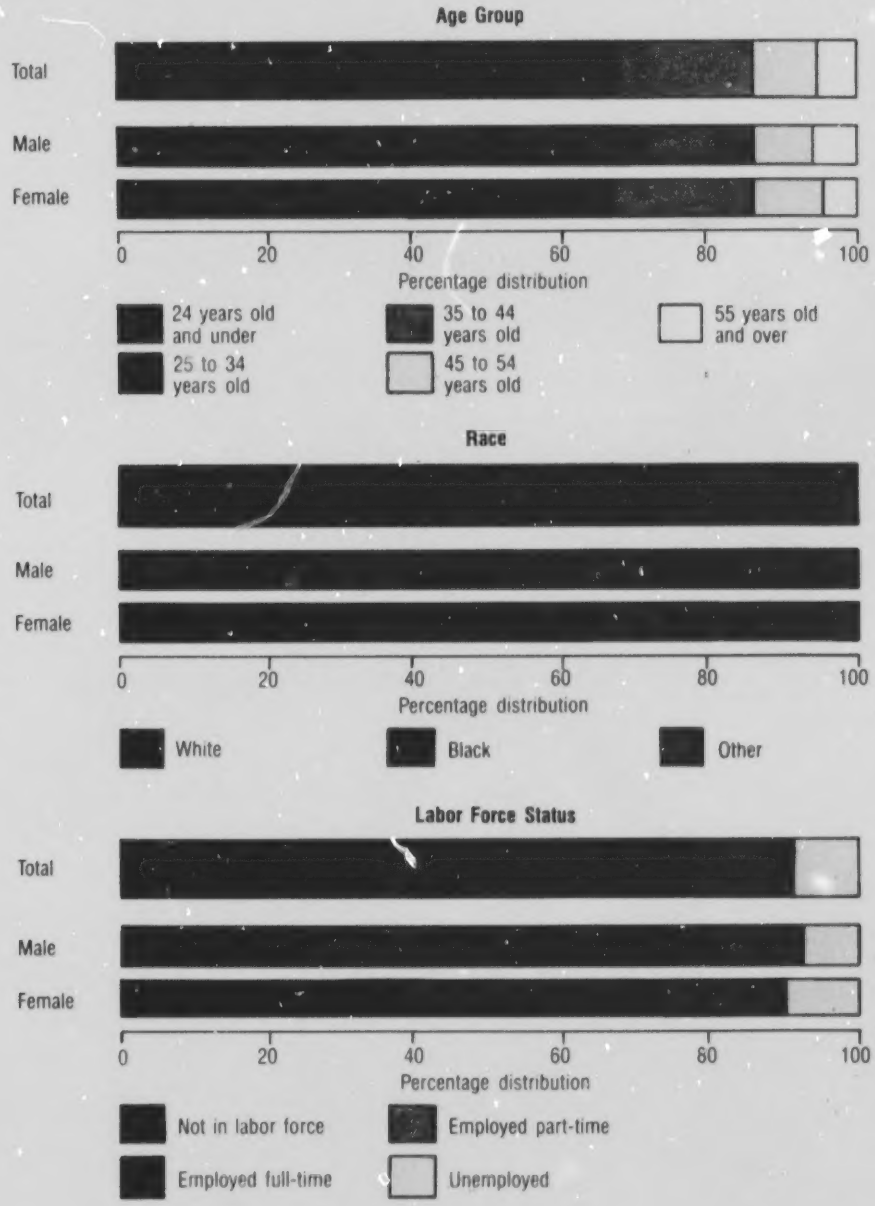
[2]Base less than 75,000.

NOTE: Definitions for labor force categories may be found in the Definitions of Selected Terms in the Appendix. Details may not add to totals because of rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1982, unpublished tabulations (September 1983).

Chart 3.9

Persons Taking Courses in a Noncollegiate Environment for a Vocational Certificate or Diploma



The majority of persons taking vocational credit courses in a noncollegiate environment were 25 years old or over and employed full-time.

Chapter 4
Educationally Disadvantaged Adults

This chapter focuses on educationally disadvantaged adults. It presents an overview of definitions of educational deficiency; some estimates of the size of the adult population with educational disadvantages; recent statistics on the relationship between educational attainment and poverty; and information about participation in adult education programs. Statistics are provided on participation rates of adults in school programs and in the General Educational Development testing program to indicate the approximate size of educational programs that aid adults lacking a high school diploma. The chapter does not, however, present measures of the learning levels of the adult population, because recent data are lacking on adult educational performance.

For purposes of discussion in this chapter, an adult who is disadvantaged because of education is one who may have insufficient educational certification, such as a high school diploma, or may lack the skills to read and write at a functional level. While an adult may lack credentials and still possess skills, lacking either may still put that person at a disadvantage.

Definition of Illiteracy

Definitions of illiteracy, or educational deficiency, have changed over time from the inability simply to read and write one's name to the inability to read and write functionally. By 1979, less than 1 percent of the population would admit to an inability to read and write in a Bureau of the Census survey. Self-reported inability to read and write, however, provides an insufficient estimate of educational deficiency, in part because of unreliable responses from survey respondents. More generally, just being able to read and write may not suffice to function even minimally in today's society.

Harvard reading professor Jeanne Chall examined the practices of measuring literacy in an extensive review of recommendations by national literacy committees and research on school practices. She found that a 12th grade reading level was considered essential, by most national groups, for adequate functioning in today's society.[1] She reports, for example, that the National Academy of Education's Reading Committee recommended that an adult should have the ability to read the *New York Times* or a newsmagazine such as *Time* critically and analytically. The increasing technical nature of most jobs and the complexity of knowledge lead many educational practitioners to conclude that high school completion, or the reading skill of a 12th grade student, is a basic necessity in the United States of the 1980's. Dr. Chall also examined the reading levels required by State minimum-competency tests for high school juniors, and found that these tests defined minimum literacy to be lower than a 12th grade reading level and closer to an 8th grade reading level. Evidence will be presented in this chapter that adults lacking a high school diploma have a much greater likelihood of living in poverty than those who completed high school. Those whose education ended in the elementary grades will be even less likely than those who dropped out of high school to have the necessary skills or credentials for holding jobs with minimum wages. Throughout the tables and text of this chapter, data for persons who completed less than 12 years of school and for those who completed less than 9 years are presented as rough measures of an educational disadvantage.

In examining the level of adult deficiency in the statistics presented in this chapter, one should consider the estimates of various studies cited by Chall on the number of children and adults with severe reading problems. She reports that as many as 10 to 15 percent of the population have severe difficulties in learning to read. Such persons would require more professional attention to attain the standard of reading efficiency obtained by most students in regular school classes. According to Chall, without this intervention some high school graduates will not acquire the level of literacy required for full participation in society.

Size of Population

Changes, by State

The decennial censuses indicate that considerable reductions occurred over the last decade in the relative size of

[1] Jeanne Chall, "Literacy: Trends and Explanations," *Educational Researcher* (November, 1983).

the educationally disadvantaged adult population. But the most recent census also shows that this population remains large, particularly in some areas. The 1970 census marked the first time that persons without a high school diploma comprised less than half of the adult population, and the 1980 census marked the first time this was true in all States.

According to these censuses, the number of persons 25 years old and over who completed less than 12 years of school declined from 52 million in 1970 to 45 million in 1980 (entry 4.1). Persons not completing high school represented about one-third of the adult population in 1980. By comparison, in 1970, the proportion nationally had just declined to under half of the population, remaining the majority in 14 States.

The range of educational deficiency in 1980 varied greatly across the Nation. The 10 States in 1980 with the highest proportion of persons who had not completed high school were in the South. Between 40 and 45 percent of the adult population in 1980 had not completed high school in those States. In the States with the lowest proportion of persons who had completed less than 12 years of school, all in the West, about 20 to 25 percent of the adults had not graduated from high school. Despite the variation, the percentage of the adult population who had not completed high school declined in every State between 1970 and 1980. Only Arizona, Florida, Nevada, and South Carolina experienced an increase in the number of persons without high school diplomas, probably due to the migration of older adults from other States or to an increase of less educated immigrants from other countries.

The proportion of adults who had completed less than 9 years of schooling declined to 18 percent in 1980 from 28 percent in 1970. Only 7 States in 1980 had more than one-fourth of their adult populations with less than 9 years of schooling: Alabama, Arkansas, Kentucky, Mississippi, South Carolina, Tennessee, and West Virginia.

Changes, by Age and Race/Ethnicity

More recent figures on the educational levels of the population by age and race and for the Hispanic population are available from the Current Population Survey (CPS). Figures on persons with lower educational attainment from the March 1982 CPS are somewhat smaller than those reported in entry 4.1 from the decennial census because the CPS excludes military personnel and their families living on posts and inmates of institutions (entry 4.2). Also, the personal interviews conducted for the CPS may tend to increase the social pressure on respondents to report that they have achieved a higher level of education than they actually received. Nevertheless, the changes observed between these 2 years may accurately reflect a significant reduction in the proportion of adults reporting that they had completed less than 9 or 12 years of school between 1970 and 1982.

Higher percentages of the educationally disadvantaged are found among older persons than among those 25 to 34 years old. Thus, as the population ages, and the younger, better-educated enter adulthood, the general educational level of the adult population will continue to increase. While only 4 percent of adults of ages 25 to 34 had completed less than 9 years of school, about 10 million adults 65 and over (39 percent of that age group) had completed that little education.

For the white and black adults, large declines occurred in the proportion of persons who were educationally disadvantaged, especially among persons under 65 years old. Decreases appear smaller for the Hispanic population. In both 1970 and 1982, the proportion who were educationally disadvantaged was higher for the Hispanic population than the black or white populations (except among the age group 65 years and over, in which the Hispanic and black populations had the same high levels). The 1970 statistics for the Hispanic population were derived from the 1970 Census of Population, whereas 1982 rates were derived from the Current Population Survey. Different definitions of the Hispanic population in those 2 years may account somewhat for the smaller changes between 1970 and 1982 observed for Hispanics than for whites and blacks. Yet in 1982, the percent who were educationally disadvantaged was much higher for the youngest adult group of Hispanics than their black or white age counterparts, suggesting that lower educational

levels may continue for that ethnic group.

Educational Attainment and Poverty

Adults who had not completed high school were much more likely than those with a high school credential to have incomes below the poverty level (entry 4.3). Those with the lowest educational attainment were the most likely to be in poverty as defined by the Bureau of the Census. In fact, persons who completed only 5 years or less of school were four times more likely to have incomes below poverty than were those with a high school diploma. The clear difference in income levels, marked by graduating from high school, is seen in the poverty rates for persons with 9 to 11 years of school and those with exactly 12 years of school completed. Persons who attended high school, but did not complete their high school program, were twice as likely to be below the poverty level than were high school graduates. This difference was found across all age groups, both sexes and both whites and blacks.

Receiving a high school education appears to be more important today than it was 10 years ago, especially for young adults. The proportion of young adults who fell below the poverty level increased between 1970 and 1981 only for those with low educational attainment. For example, in 1970, 16 percent of 22- to 34- year-olds who completed 1 to 3 years of high school were below the poverty level;[1] in 1981, the rate increased to 28 percent. In 1970, poverty rates for younger adults were lower than for older persons (65 and over) at each educational level, but by 1981 their rates were generally higher. The poverty rate for those 35 to 64 years old remained lower than for young adults 22 to 34. These data suggest that while all working-age adults were more likely to be in poverty in 1981 than in 1970,[2] those without a high school diploma faced especially difficult hardships in the marketplace. And those with only an elementary school education were even more likely to be in poverty.

Adults from Other Countries Who Speak Other Languages

Recent immigrants to the United States are another potential source of adults who may be educationally disadvantaged. Undoubtedly, many recent immigrants would experience little or no problem adjusting to their new home. But many others would suffer from language barriers, educational deficiencies, or both. No information is yet available on the educational background of recent immigrants, but the decennial censuses show that the number of immigrants has grown over the past decade.

In 1970 and again in 1980, the Bureau of the Census gathered data charting the growth of immigration to this country (entry 4.4). The later survey found that the number of foreign-born increased by over 4 million in the decade spanning these 2 years, an increase of 46 percent. Approximately two-fifths of all foreign-born arrived in this country between 1970 and 1980. These more recent arrivals generally comprised larger proportions of all foreign-born in the southern half of the United States. California and Hawaii had the highest proportion of persons born in a foreign country, while Nevada and Mississippi had experienced the highest rates of growth. Oklahoma and Texas had the highest proportion of recent immigrants among the foreign-born residents.

Another indicator of the number and type of adults with educational disadvantages, also taken from the 1980 Census of Population, shows the extent of limited-English speaking ability reported by respondents. Among persons 18 years old and over, about 19 million reported speaking a language other than English at home, and about 3.6 million of those stated that they did not speak English well or at all (entry 4.5). Of these, about two out of three spoke Spanish at home.

Nationally, these numbers translated into approximately 2 percent of the adult population that reported difficulty with speaking English; in most States, the proportion was lower than that. However, there were notable

[1] U.S. Department of Commerce, Bureau of the Census, "Characteristics of the Low-Income Population: 1970," *Current Population Reports*, Series P. 60, No. 81, Washington, D.C., 1972.

[2] The poverty rate for persons 22 to 64 years old was 8.6 percent in 1970 and 10.5 percent 1981. See "Characteristics of the Population Below the Poverty Level: 1981," *Current Population Reports*, Series P-60, No. 138, and P-60, No. 81, 1972.

exceptions. California, Hawaii, New Mexico, New York, and Texas each had much higher than average percentages that indicated difficulty or inability to speak English. While in Texas this population segment was almost exclusively Spanish-speaking, in New York other language groups were represented as well. The highest proportion of adults who indicated they spoke limited English, 6 percent, and the largest number, over 1 million, lived in California. The size estimate of the limited English-speaking population is somewhat imprecise, because it is based on a household response to a simple interview question, and not a carefully conducted test of English-speaking ability. Still, these figures do show which States are most likely to have large populations with possible educational disadvantages.

Participation in Education Programs

Some adults with educational deficiencies take active steps to reduce these deficiencies. They may attend adult education programs at local schools, receive basic skills training through work organizations, study for the General Educational Development (GED) test for high school credentials, or attend volunteer and community programs. Adults also may participate in alternative diploma programs, such as the Adult Performance Level Project and the New York State External Diploma Project, which are generally competency- or performance-based and place an emphasis on the need for adult-oriented content. No reliable figures are available that measure participation levels in all of these various programs aimed at gaining functional literacy. The participation of adults aged 16 and over in federally funded adult basic and adult secondary education programs was estimated to be about 2.2 million in 1983.[4]

Participation in Schools and Adult Education

Limited information is available from Current Population Survey on the number of adults who had not graduated from high school but who participated in various types of adult education classes in October 1982. The data show that out of 42 million adults who had completed less than 12 years of school, about 900,000, or 2 percent of the eligible population, reported they were participating in some type of adult education program that month (entry 4.6). While adults from all age groups were represented in those classes, those under 25 years old were more likely to participate than older adults. Although the sample size is too small to draw detailed conclusions, it appears clear that adults under 25 who participated were more likely to be enrolled in elementary/secondary school settings while older adults participated in adult education courses offered through other providers.

The May 1981 Participation in Adult Education Survey documented as well that persons with the least education were also the least likely to participate in adult education.[5] Persons with an 8th-grade education or less participated at a rate of only 2 percent in 1981. By comparison, the average participation rate for all adults was almost 13 percent.

Participation in GED Testing Program

Another method open to adults for acquiring educational credentials is successfully passing the State requirements for a high school diploma through the GED testing program open in every State. The number of persons taking such tests has grown from 503,000 in 1975 to 682,000 in 1982 (entry 4.7). About 72 percent of the persons taking the test acquired a high school equivalency certificate by receiving an adequate score. About half of the persons taking the test planned to continue their education.

The figures do not show a significant change in the age distribution of persons taking GED tests since 1975, when these figures first became available. They indicate that most of the persons taking the GED tests were under age 25. Thus, while the GED program is certainly available for all adults, there has not been a large growth in use of this program by older adults.

[4] U.S. Department of Education, Office of Vocational and Adult Education, unpublished tabulations (December 1983).

[5] U.S. Department of Education, National Center for Education Statistics, *The Condition of Education*, 1983.

Table 4.1

Persons 25 Years Old and Over With Less Than 9 and Less Than 12 Years of School Completed, by State: April 1970 and April 1980

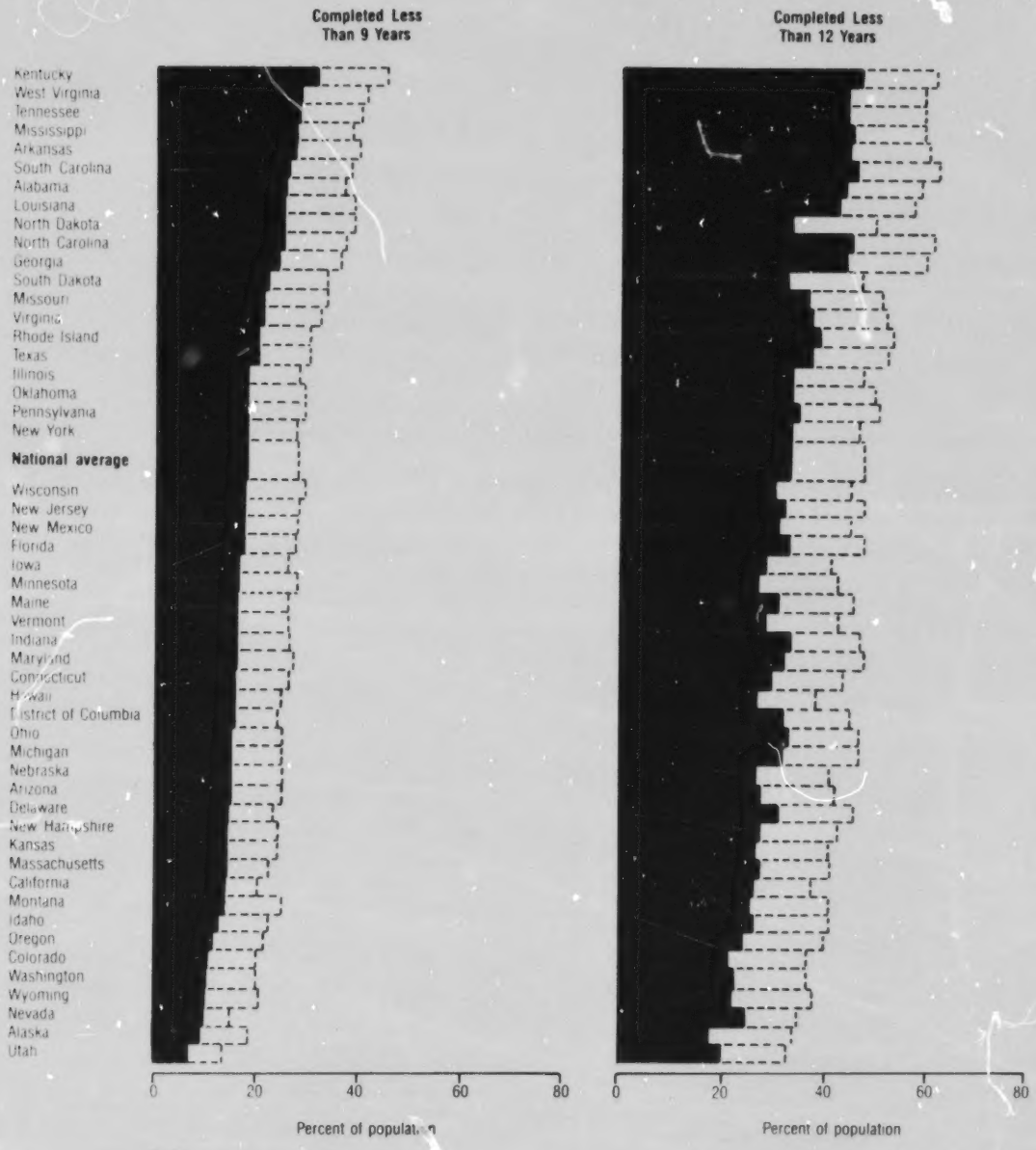
State	1970, Completed Less Than—				1980, Completed Less Than—			
	9 Years		12 Years		9 Years		12 Years	
	Number, in Thousands	Percent of Population	Number, in Thousands	Percent of Population	Number, in Thousands	Percent of Population	Number, in Thousands	Percent of Population
United States	31,087	**28.3**	52,373	**47.7**	24,258	**18.3**	44,536	**33.5**
Alabama	665	**36.8**	1,062	**58.7**	554	**25.0**	965	**43.5**
Alaska	25	**18.5**	45	**33.3**	19	**9.0**	37	**17.5**
Arizona	228	**24.9**	385	**42.0**	234	**15.0**	431	**27.6**
Arkansas	424	**40.1**	635	**60.0**	359	**26.9**	596	**44.6**
California	2,150	**19.8**	4,062	**37.3**	1,996	**14.2**	3,725	**26.5**
Colorado	228	**20.0**	412	**36.1**	176	**10.6**	356	**21.4**
Connecticut	440	**26.1**	741	**44.0**	310	**16.3**	564	**29.7**
Delaware	67	**23.3**	131	**45.6**	51	**14.8**	108	**31.3**
District of Columbia	102	**24.1**	190	**44.9**	64	**16.0**	131	**32.8**
Florida	1,104	**27.8**	1,882	**47.4**	1,101	**17.6**	2,083	**33.3**
Georgia	854	**36.2**	1,399	**59.4**	731	**23.7**	1,345	**43.6**
Hawaii	95	**24.7**	146	**37.9**	89	**16.2**	144	**26.3**
Idaho	81	**22.0**	150	**40.7**	65	**12.6**	135	**26.3**
Illinois	1,738	**23.5**	2,885	**47.4**	1,236	**18.5**	2,237	**33.5**
Indiana	729	**26.5**	1,292	**47.1**	519	**16.5**	1,054	**33.6**
Iowa	402	**26.1**	633	**41.1**	284	**16.7**	484	**28.5**
Kansas	298	**24.3**	492	**40.1**	203	**14.6**	370	**26.7**
Kentucky	768	**44.8**	1,053	**61.5**	654	**31.3**	978	**46.9**
Louisiana	698	**38.6**	1,046	**57.8**	569	**24.9**	966	**42.3**
Maine	137	**25.5**	244	**45.4**	110	**16.6**	208	**31.4**
Maryland	571	**27.4**	993	**47.7**	412	**16.5**	814	**32.6**
Massachusetts	712	**22.7**	1,305	**41.5**	497	**14.1**	963	**27.8**
Michigan	1,155	**25.1**	2,169	**47.2**	792	**15.[illegible]**	1,682	**32.0**
Minnesota	566	**28.4**	844	**42.4**	392	**16.7**	632	**26.9**
Mississippi	430	**38.7**	656	**59.0**	369	**27.0**	619	**45.2**
Missouri	880	**33.8**	1,332	**51.2**	634	**21.7**	1,064	**36.5**
Montana	92	**25.2**	149	**40.8**	64	**14.2**	115	**25.5**
Nebraska	204	**25.3**	328	**40.7**	138	**15.1**	243	**26.6**
Nevada	40	**15.1**	92	**34.7**	46	**9.6**	118	**24.6**
New Hampshire	98	**24.6**	169	**42.5**	79	**14.6**	150	**27.7**
New Jersey	1,136	**28.0**	1,925	**47.4**	798	**17.7**	1,468	**32.6**
New Mexico	136	**27.8**	220	**44.9**	125	**17.7**	220	**31.1**
New York	2,907	**27.9**	4,933	**47.3**	1,962	**18.3**	3,616	**33.7**
North Carolina	983	**37.2**	1,628	**61.5**	836	**24.6**	1,537	**45.2**
North Dakota	123	**38.7**	158	**49.7**	90	**24.7**	122	**33.4**
Ohio	1,438	**25.2**	2,666	**46.8**	967	**15.4**	2,078	**33.0**
Oklahoma	420	**29.5**	689	**48.4**	325	**18.4**	602	**34.0**
Oregon	248	**21.5**	461	**39.9**	181	**11.5**	385	**24.4**
Pennsylvania	1,951	**29.2**	3,328	**49.7**	1,332	**18.4**	2,557	**35.3**
Rhode Island	158	**30.2**	281	**53.6**	119	**20.7**	224	**39.0**
South Carolina	489	**38.1**	799	**62.2**	445	**25.7**	802	**46.3**
South Dakota	118	**33.8**	163	**46.7**	86	**22.1**	125	**32.1**
Tennessee	851	**40.0**	1,240	**58.3**	745	**27.7**	1,180	**43.8**
Texas	1,759	**30.2**	3,061	**52.6**	1,641	**20.7**	2,970	**37.4**
Utah	66	**13.4**	160	**32.5**	50	**7.1**	141	**20.2**
Vermont	61	**26.2**	100	**42.9**	49	**16.6**	85	**28.8**
Virginia	788	**32.2**	1,277	**52.2**	678	**21.6**	1,177	**37.6**
Washington	346	**18.9**	667	**36.5**	252	**10.3**	546	**22.4**
West Virginia	395	**40.8**	565	**58.3**	321	**28.0**	505	**44.0**
Wisconsin	695	**29.8**	1,060	**45.5**	485	**18.0**	822	**30.4**
Wyoming	36	**20.5**	66	**37.5**	25	**9.8**	56	**22.0**

NOTE: Because of differences in population coverage and responses to household questionnaires, figures in this table with Decennial Census statistics do not fully agree with those in following tables from the Current Population Survey. For example, the Decennial Census includes institutionalized population and all military personnel, not included in the Current Population Survey.

SOURCE: U.S. Department of Commerce, Bureau of the Census, 1970 Census of Population, Vol. I, Chapter C, U.S. Summary, "General Social and Economic Characteristics," 1973, and 1980 Census of Population and Housing, Series PHC80-52, *Advance Estimates of Social, Economic, and Housing Characteristics*, 1983.

Chart 4.1

Persons 25 Years Old and Over With Less Than 9 and Less Than 12 Years of School Completed, by State



In every State, the proportions of the adult population that had completed less than 9 or less than 12 years of school were substantially reduced between 1970 and 1980.

Table 4.2

Persons 25 Years Old and Over With Less Than 9 and Less Than 12 Years of School Completed, by Race/Ethnicity, Sex, and Age Group: March 1970 and March 1982

Characteristic	1970, Completed Less Than—				1982, Completed Less Than—			
	9 Years		12 Years		9 Years		12 Years	
	Number, in Thousands	Percent of Population	Number, in Thousands	Percent of Population	Number, in Thousands	Percent of Population	Number, in Thousands	Percent of Population
Total	30,296	27.7	48,948	44.8	21,351	15.8	39,357	29.0
Male	14,956	28.9	23,311	45.0	10,061	15.8	18,021	28.3
Female	15,311	26.6	25,638	44.6	11,290	15.7	21,336	29.7
25 to 34 years old	2,266	9.1	6,517	26.2	1,709	4.4	5,307	13.7
35 to 64 years old	16,498	25.5	28,298	43.7	9,700	13.5	19,939	27.9
65 years old and over	11,502	58.2	14,134	71.7	9,942	39.4	14,111	55.9
White	25,586	**26.1**	41,789	**42.6**	17,410	**14.7**	32,338	**27.2**
Male	12,674	27.2	19,963	42.8	8,275	14.7	14,991	26.6
Female	12,912	25.1	21,825	42.4	9,135	14.6	17,347	27.7
25 to 34 years old	1,838	**8.4**	5,222	**23.9**	1,420	**4.3**	4,237	**12.8**
35 to 64 years old	13,544	**23.3**	23,850	**41.1**	7,650	**12.2**	15,956	**25.4**
65 years old and over	10,203	**56.2**	12,716	**70.1**	8,342	**36.6**	12,148	**53.3**
Black	4,333	**42.9**	6,686	**66.3**	3,353	**24.7**	6,131	**45.1**
Male	2,107	45.6	3,120	67.5	1,539	25.7	2,649	44.3
Female	2,225	40.7	3,565	65.2	1,813	23.8	3,480	45.7
25 to 34 years old	398	**15.0**	1,237	**46.7**	217	**4.9**	920	**20.7**
35 to 64 years old	2,754	**45.7**	4,165	**69.2**	1,743	**24.7**	3,498	**49.6**
65 years old and over	1,183	**83.5**	1,290	**91.0**	1,393	**66.3**	1,715	**81.6**
Hispanic*	1,959	**49.6**	2,678	**67.9**	2,695	**40.5**	3,593	**54.1**
Male	919	48.5	1,264	66.6	1,214	39.3	1,604	51.9
Female	1,039	50.7	1,414	69.0	1,481	41.6	1,990	55.9
25 to 34 years old	421	**32.7**	713	**55.5**	690	**26.4**	1,085	**41.6**
35 to 64 years old	1,219	**54.0**	1,615	**71.5**	1,583	**45.6**	2,043	**58.9**
65 years old and over	320	**79.0**	350	**86.6**	421	**74.0**	463	**81.4**

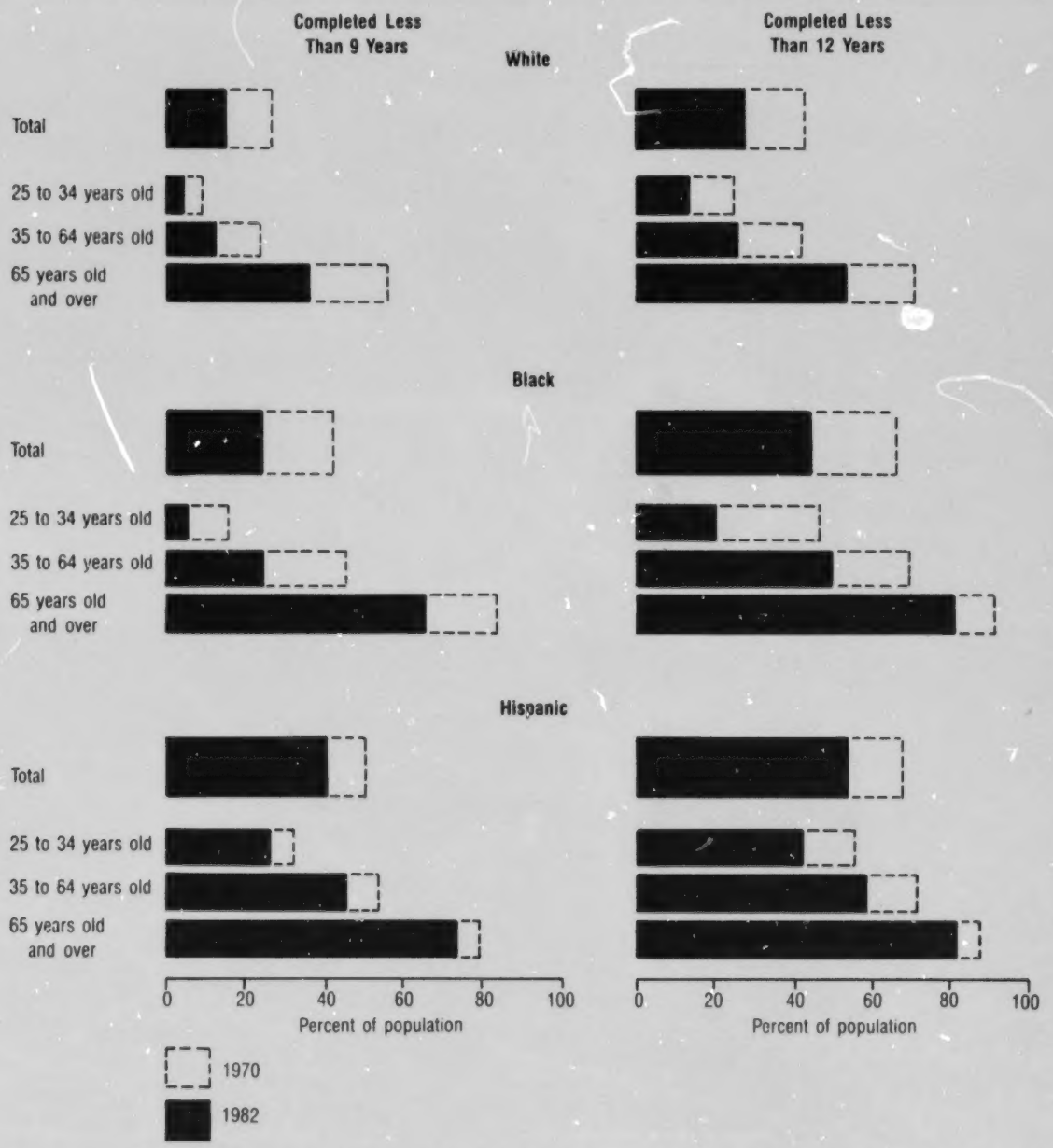
*May be of any racial group. Hispanic figures for 1970 are persons of Spanish origin from the 1970 Census of Population. These figures may not be entirely consistent with those for 1982 from the Current Population Survey.

NOTE: Because of differences in population coverage and responses to household questionnaires, figures in this table with Current Population Survey statistics do not fully agree with those from the Decennial Census. The Current Population Survey includes only the civilian noninstitutionalized population. In addition, the 1982 figures for the number of persons with less than 12 years of school may not be entirely consistent with those for the October 1982 Current Population Survey because the surveys were conducted in different months and are subject to sampling variability.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, No. 207, "Educational Attainment: March 1970" (November 1970); 1970 Census of Population, *Persons of Spanish Origin*: PC(2)-1C (June 1973); and unpublished Current Population Survey data.

Chart 4.2

Persons 25 Years Old and Over With Less Than 9 and Less Than 12 Years of School Completed, by Race/Ethnicity and Age Group



Reductions in the percent of the population that had completed less than 9 or less than 12 years of school were more pronounced among whites and blacks than among Hispanics between 1970 and 1982.

Table 4.3

Persons 22 Years Old and Over Below Poverty Level,[1] by Age Group, Educational Attainment, Sex, and Race: 1981

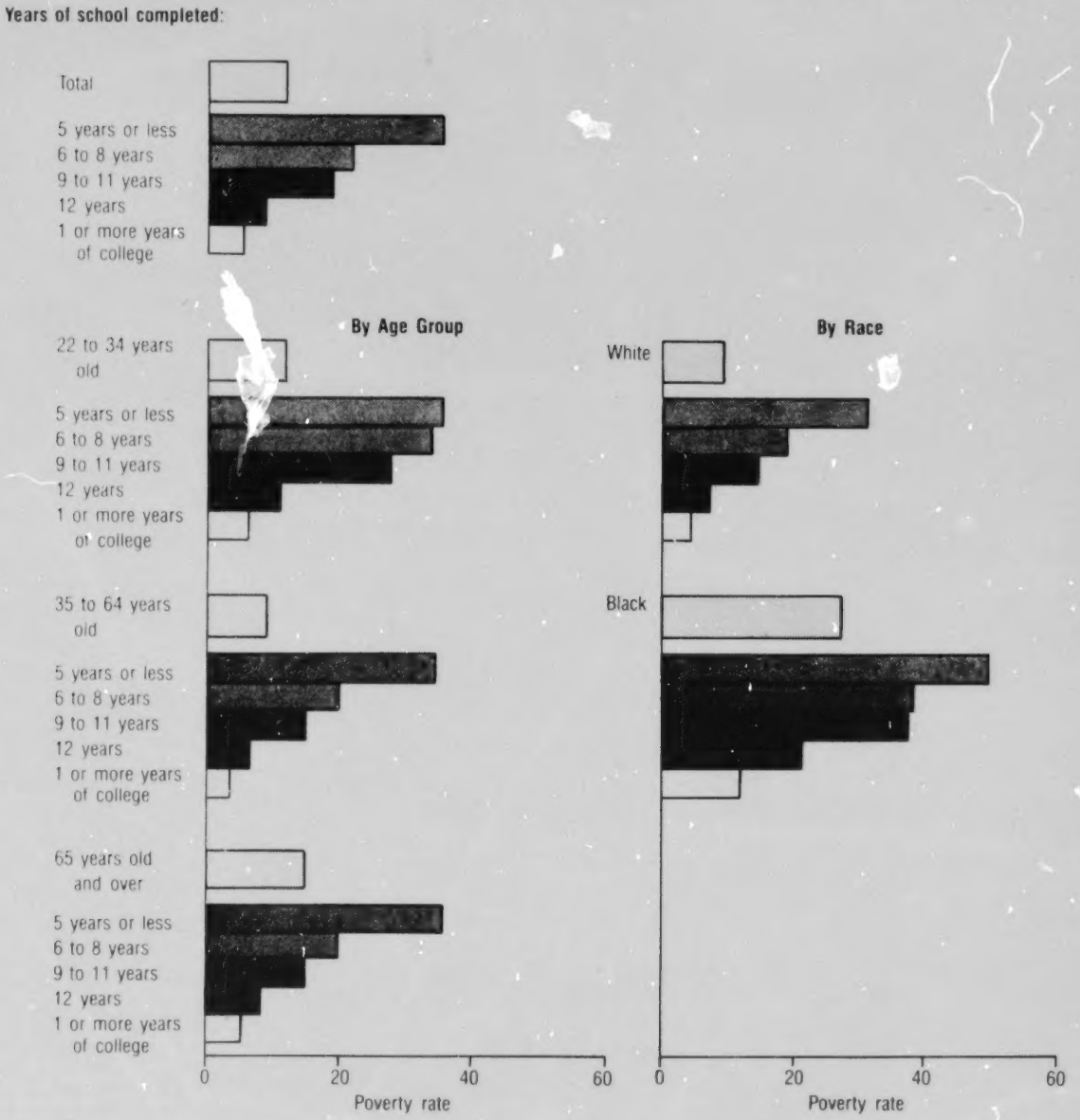
Years of School Completed, Sex, and Race	Total	22 to 34 Years Old	35 to 64 Years Old	65 Years Old and Over	Total	22 to 34 Years Old	35 to 64 Years Old	65 Years Old and Over
	Number Below Poverty Level, in Thousands				Poverty Rate			
Total	16,732	6,074	6,805	3,853	**11.3**	**11.8**	**9.5**	**15.3**
5 years or less	2,013	196	865	952	**35.2**	**35.3**	**34.5**	**35.9**
6 to 8 years	3,480	548	1,451	1,482	**21.6**	**33.9**	**20.2**	**20.3**
9 to 11 years	3,622	1,413	1,577	632	**18.6**	**27.8**	**15.4**	**15.2**
12 years	5,049	2,465	2,043	542	**8.8**	**11.4**	**7.0**	**8.3**
1 or more years of college	2,568	1,453	871	245	**5.2**	**6.5**	**3.8**	**5.4**
Male	6,001	2,361	2,559	1,080	8.6	9.3	7.4	10.5
5 years or less	839	83	392	364	29.1	29.1	29.3	28.9
6 to 8 years	1,144	213	561	370	15.5	27.4	15.4	12.4
9 to 11 years	1,140	471	500	169	13.1	19.6	10.7	10.4
12 years	1,736	915	709	112	7.1	9.0	5.9	4.8
1 or more years of college	1,140	679	398	65	4.3	5.8	3.1	3.1
Female	10,731	3,713	4,246	2,773	13.7	14.2	11.4	18.6
5 years or less	1,174	112	473	588	41.4	41.5	40.3	42.3
6 to 8 years	2,336	336	889	1,112	26.9	40.1	25.1	25.8
9 to 11 years	2,482	942	1,076	463	23.0	35.2	19.4	18.2
12 years	3,313	1,550	1,334	429	10.1	13.5	7.9	10.2
1 or more years of college	1,427	774	473	180	6.1	7.2	4.7	7.3
White	12,066	4,243	4,845	2,978	**9.3**	9.7	7.7	13.1
5 years or less	1,267	160	550	558	**30.9**	32.9	30.8	30.4
6 to 8 years	2,604	407	995	1,202	**19.0**	30.8	17.0	18.5
9 to 11 years	2,392	876	1,004	512	**14.8**	21.8	12.1	13.4
12 years	3,786	1,711	1,583	492	**7.4**	9.2	6.0	7.9
1 or more years of college	2,016	1,088	714	214	**4.5**	5.6	3.5	4.9
Black	4,154	1,591	1,743	820	**27.3**	26.3	24.7	39.0
5 years or less	655	76	271	368	**49.3**	(B)	46.6	51.9
6 to 8 years	797	116	410	271	**38.3**	47.5	35.4	39.6
9 to 11 years	1,142	498	539	105	**37.6**	51.7	30.7	32.5
12 years	1,119	655	413	48	**21.6**	24.5	18.3	21.0
1 or more years of college	441	306	108	27	**12.3**	14.3	8.3	17.3

[1]Income for 1981 as reported in March of the following year.
(B)Base less than 75,000.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60, No. 138, *Consumer Income: Characteristics of the Population Below the Poverty Level: 1981*.

Chart 4.3

Poverty Rate of Persons 22 Years Old and Over, by Years of School Completed



For young or old, black or white, persons with less than a high school education were generally twice as likely to be below the poverty level as persons with more education.

Table 4.4

Foreign Born Population and Recent Immigrants, by State: April 1970 and April 1980

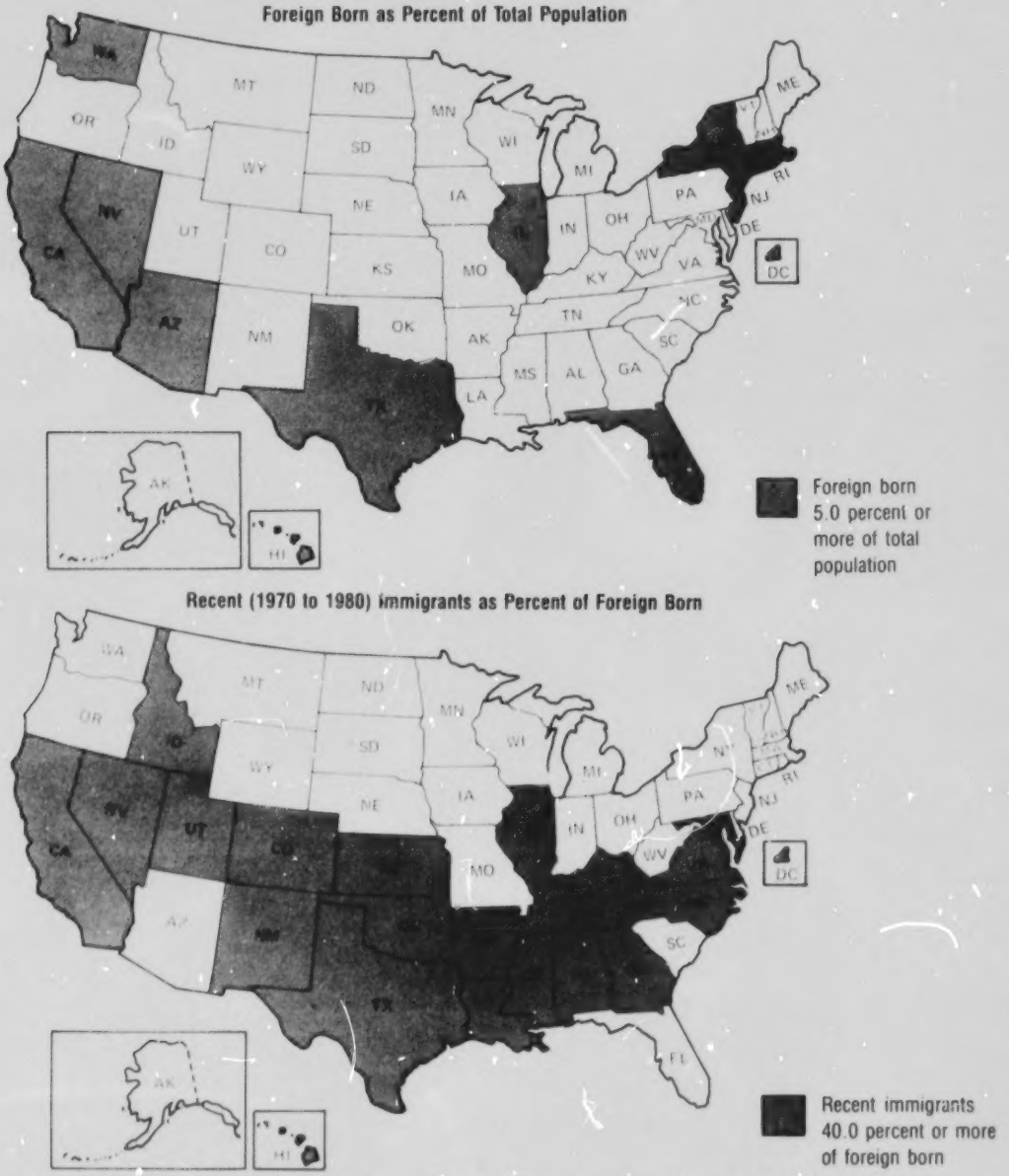
State	1970		1980		Recent Immigrants (1970 to 1980) as Percent of Foreign Born	Percent Change in Number of Foreign Born 1970 to 1980
	Number of Foreign Born, in Thousands	Percent of Total Population	Number of Foreign Born, in Thousands	Percent of Total Population		
United States	9,619	4.7	14,080	6.2	39.5	46.4
Alabama	16	.5	39	1.0	41.2	143.9
Alaska	8	2.6	16	4.0	39.4	108.9
Arizona	77	4.3	163	6.0	36.2	112.6
Arkansas	8	.4	22	1.0	41.4	170.0
California	1,758	8.8	3,580	15.1	50.4	103.6
Colorado	60	2.7	114	3.9	41.2	89.2
Connecticut	262	8.6	268	8.6	24.7	2.4
Delaware	16	2.9	19	3.2	27.7	20.3
District of Columbia	32	4.4	41	6.4	51.2	24.6
Florida	540	8.0	1,059	10.9	30.8	96.0
Georgia	34	.7	91	1.7	42.8	169.2
Hawaii	76	9.8	137	14.2	51.0	81.2
Idaho	12	1.8	23	2.5	40.3	86.2
Illinois	529	5.7	824	7.2	41.4	31.0
Indiana	83	1.6	102	1.9	32.4	22.4
Iowa	40	1.4	48	1.6	36.9	18.5
Kansas	28	1.2	48	2.0	48.7	72.0
Kentucky	17	.5	34	.9	42.6	108.8
Louisiana	39	1.1	85	2.0	46.9	116.2
Maine	43	4.3	43	3.9	13.6	.9
Maryland	124	3.2	195	4.6	44.1	57.3
Massachusetts	495	8.7	501	8.7	28.8	1.3
Michigan	424	4.8	417	4.5	25.2	1.7
Minnesota	98	2.6	107	2.6	36.8	9.6
Mississippi	8	.4	23	.9	43.6	189.6
Missouri	66	1.4	86	1.7	34.4	30.2
Montana	20	2.8	18	2.3	20.0	6.7
Nebraska	29	1.9	31	2.0	34.5	7.7
Nevada	18	3.7	54	6.7	40.9	195.9
New Hampshire	37	5.0	41	4.4	15.2	10.6
New Jersey	635	8.9	758	10.3	33.7	19.4
New Mexico	23	2.2	52	4.0	44.7	132.8
New York	2,110	11.6	2,389	13.6	34.9	13.2
North Carolina	29	.6	78	1.3	41.4	173.8
North Dakota	18	3.0	15	2.3	25.7	19.6
Ohio	316	3.0	302	2.8	24.2	4.5
Oklahoma	20	.8	56	1.9	55.1	179.2
Oregon	66	3.2	108	4.1	37.4	63.0
Pennsylvania	446	3.8	401	3.4	24.8	10.1
Rhode Island	74	7.8	84	8.9	33.6	12.9
South Carolina	14	.6	46	1.5	39.4	220.8
South Dakota	11	1.6	10	1.4	24.5	11.9
Tennessee	19	.5	48	1.1	43.3	154.3
Texas	310	2.8	856	6.0	52.2	176.4
Utah	30	2.8	50	3.5	42.8	70.6
Vermont	18	4.2	21	4.1	16.7	13.6
Virginia	72	3.9	177	3.3	49.6	145.3
Washington	156	4.6	239	5.8	35.2	53.2
West Virginia	17	1.0	22	1.1	33.2	31.9
Wisconsin	131	3.0	125	2.7	24.8	-4.1
Wyoming	7	2.1	10	2.0	36.6	37.5

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, 1970 Census of Population and 1980 Census of Population, Vol. 1, Chapter C, U.S. Summary, "General Social and Economic Characteristics," 1973 and 1984.

Chart 4.4

Foreign Born Population and Recent Immigrants: 1980



Although the foreign born comprised less than 5 percent of the population in a majority of States, they represented at least 10 percent of the population in California, Florida, Hawaii, New Jersey, and New York. Immigrants who arrived in the last decade generally made up a larger proportion of the foreign born in the southern half of the United States.

Table 4.5

Persons 18 Years Old and Over Reporting Limited English Speaking Ability, by Language Spoken at Home and by State: April 1980

(Numbers in Thousands)

State	Total Population 18 Years Old and Over	Speak Non-English Language at Home						
		Total	Speak English Not Well or Not at All		Speak Spanish at Home		Speak Other Non-English Language at Home	
			Number	Percent of Total Population 18 Years Old and Over	Total	Speak English Not Well or Not at All	Total	Speak English Not Well or Not at All
United States	162,753	18,543	3,590	2.2	8,171	2,255	10,372	1,334
Alabama	2,731	53	4	.2	17	1	36	3
Alaska	271	36	5	1.7	4	0	31	4
Arizona	1,927	375	61	3.2	243	41	133	20
Arkansas	1,615	31	3	.2	10	1	21	2
California	17,284	3,898	1,049	6.1	2,330	780	1,568	269
Colorado	2,080	237	25	1.2	147	16	90	9
Connecticut	2,284	350	55	2.4	68	20	282	35
Delaware	428	25	3	.7	6	1	20	2
District of Columbia	495	42	6	1.2	16	3	26	2
Florida	7,385	1,007	264	3.6	623	229	384	35
Georgia	3,814	107	11	.3	36	4	71	7
Hawaii	690	200	40	5.7	11	1	189	39
Idaho	637	38	7	1.0	20	5	18	2
Illinois	8,179	990	204	2.5	359	119	631	86
Indiana	3,871	167	18	.5	51	8	117	10
Iowa	2,086	77	7	.3	16	2	62	5
Kansas	1,714	86	9	.5	32	4	54	5
Kentucky	2,577	48	4	.2	14	1	35	3
Louisiana	2,874	336	33	1.1	41	6	296	27
Maine	802	100	8	1.0	2	0	98	7
Maryland	3,050	199	24	.8	42	6	157	18
Massachusetts	4,245	599	98	2.3	73	20	526	78
Michigan	6,510	483	55	.8	78	11	405	45
Minnesota	2,902	186	14	.5	17	2	169	12
Mississippi	1,704	35	3	.2	11	1	23	2
Missouri	3,552	116	11	.3	29	3	87	8
Montana	555	32	2	.4	5	(*)	28	2
Nebraska	1,122	61	6	.5	14	2	47	4
Nevada	585	60	9	1.6	28	6	33	4
New Hampshire	662	80	5	.8	3	(*)	77	5
New Jersey	5,373	892	191	3.6	294	105	599	86
New Mexico	885	339	41	4.6	270	30	69	11
New York	12,869	2,689	572	4.4	1,024	318	1,664	254
North Carolina	4,222	104	10	.2	34	3	70	7
North Dakota	461	64	2	.5	3	(*)	61	2
Ohio	7,704	434	45	.6	71	9	363	36
Oklahoma	2,170	92	11	.5	31	5	61	6
Oregon	1,909	108	16	.8	32	6	75	10
Pennsylvania	8,738	652	76	.9	93	20	559	56
Rhode Island	704	129	22	3.2	9	3	120	19
South Carolina	2,179	56	5	.2	17	2	39	3
South Dakota	484	42	2	.4	2	(*)	40	2
Tennessee	3,291	66	6	.2	21	2	45	4
Texas	9,922	2,042	459	4.6	1,734	430	307	29
Utah	922	76	8	.9	29	3	47	6
Vermont	365	28	2	.5	2	(*)	26	2
Virginia	3,873	179	21	.5	50	7	129	14
Washington	2,993	219	31	1.0	59	11	160	20
West Virginia	1,390	33	3	.2	6	1	27	2
Wisconsin	3,346	219	20	.6	35	6	184	14
Wyoming	324	23	2	.7	12	2	11	1

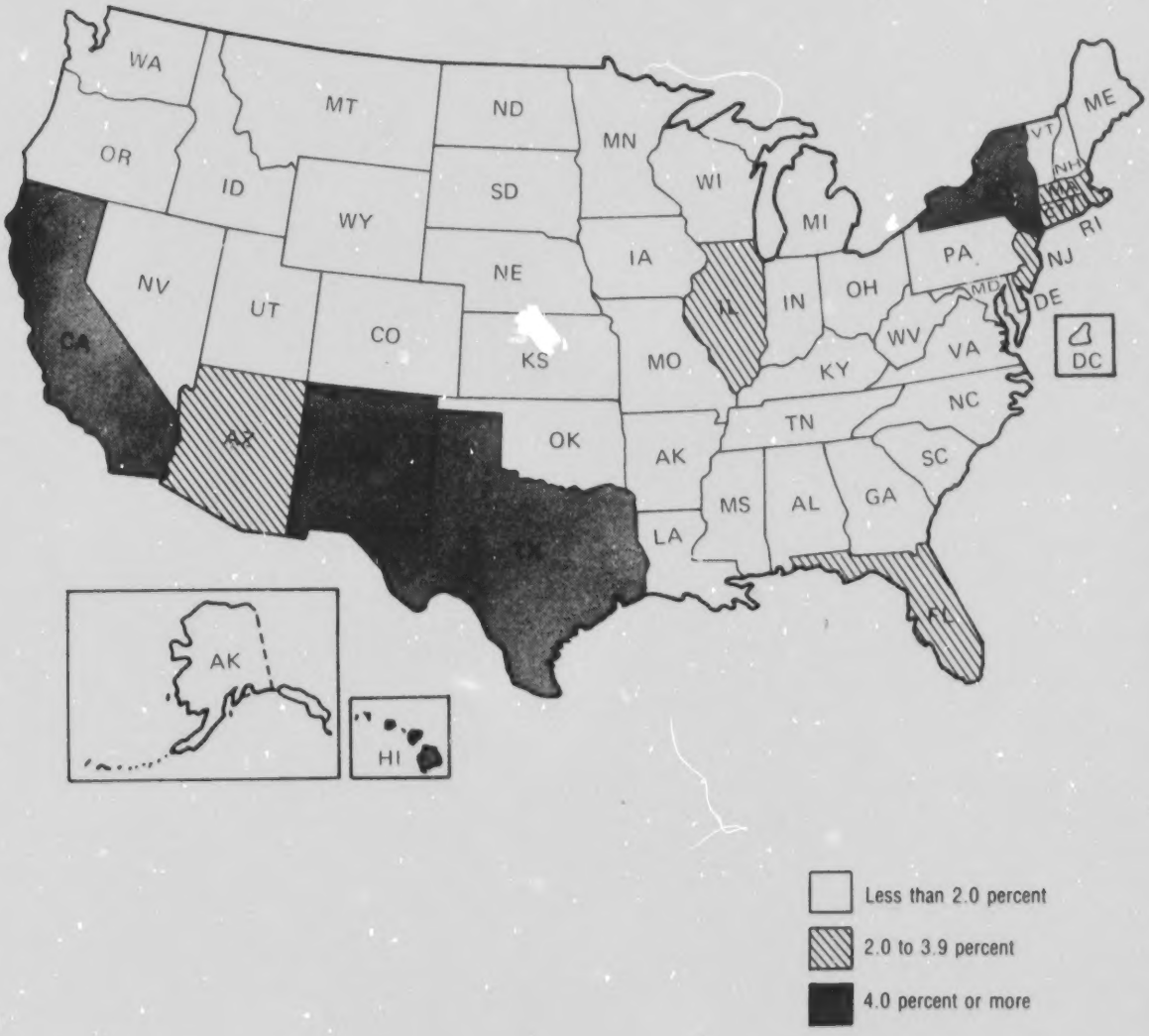
*Less than 500

NOTE: Details may not add to totals because of rounding

SOURCE: U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Census Summary Tape File 3C, unpublished tabulations (January 1984)

Chart 4.5

Persons 18 Years Old And Over Who Reported Limited English Speaking Ability



Although the proportion of the adult population that reported difficulty in speaking English was less than 2 percent in most States, the percentages were at least twice that in California, Hawaii, New Mexico, New York, and Texas.

Table 4.6

Educational Participation of Persons 20 Years Old and Over, With Less than 12 Years of School Completed, by Age Group: October 1982

(Numbers in Thousands)

Age Group	Persons With Less than 12 Years of School Completed	Number Participating in Education			Percent Participating in Education
		Total	Elementary/ Secondary Schools[1]	Adult Education[2]	
Total	42,226	866	331	534	2.1
20 to 24 years old	3,311	256	148	109	7.7
25 to 34 years old	5,292	238	109	129	4.5
35 to 64 years old	19,487	306	64	241	1.6
65 years old and over	14,136	66	10	56	.5

[1]Persons responding that they were enrolled in a regular school, grades 1 to 12.

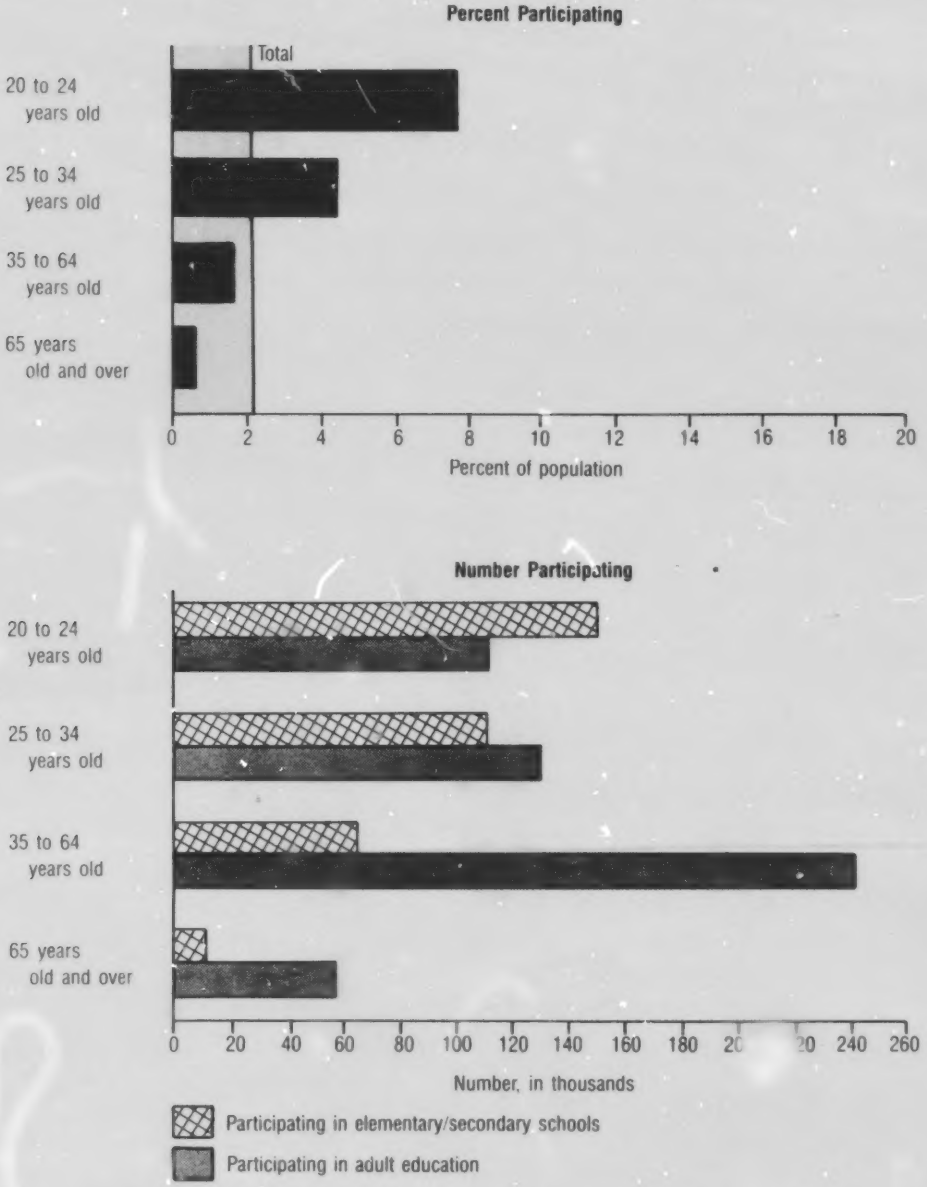
[2]Persons responding that they were taking "courses for personal development, for job skills, as in business vocational courses, for general enjoyment, or for credit towards a degree, certificate or diploma." Correspondence courses were included.

NOTE: Details may not add to totals because of rounding. These figures for the number of persons with less than 12 years of school completed may not be entirely consistent with those for the March 1982 Current Population Survey, because the surveys were conducted in different months and are subject to sampling variability.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1982, unpublished tabulations (December 1983).

Chart 4.6

Educational Participation of Persons 20 Years Old and Over, With Less Than 12 Years of School Completed, by Age Group



The proportion of adults without a high school diploma who were enrolled in courses at the elementary/secondary level or in adult education classes was small, only 2 percent. Younger adults who participated were more likely to be enrolled in elementary/secondary schools, older participants in adult education courses.

Table 4.7

Persons Tested by the General Educational Development (GED) Testing Service for High School Equivalency Credentials, by Age Group and Average Years of School Completed: Selected Years, 1975, 1980, and 1982

Item	1975	1980	1982
Number of persons tested,[1] in thousands	503	699	682
Number of credentials issued,[2] in thousands	340	479	492
Characteristics of persons tested:[3]			
Percentage distribution, by age, total	100	100	100
19 years old and under	33	37	37
20 to 24 years old	26	27	28
25 to 29 years old	14	13	13
30 to 34 years old	9	8	8
35 to 39 years old	7	6	6
40 years old and over	11	9	9
Average years of school completed	10.0	10.0	9.9
Percent meeting State score requirements	72.3	70.5	73.3
Percent planning further study	52.5	37.2	48.1

[1] Number of persons tested with complete battery for the first time or retested from previous years, for United States, excluding outlying areas.

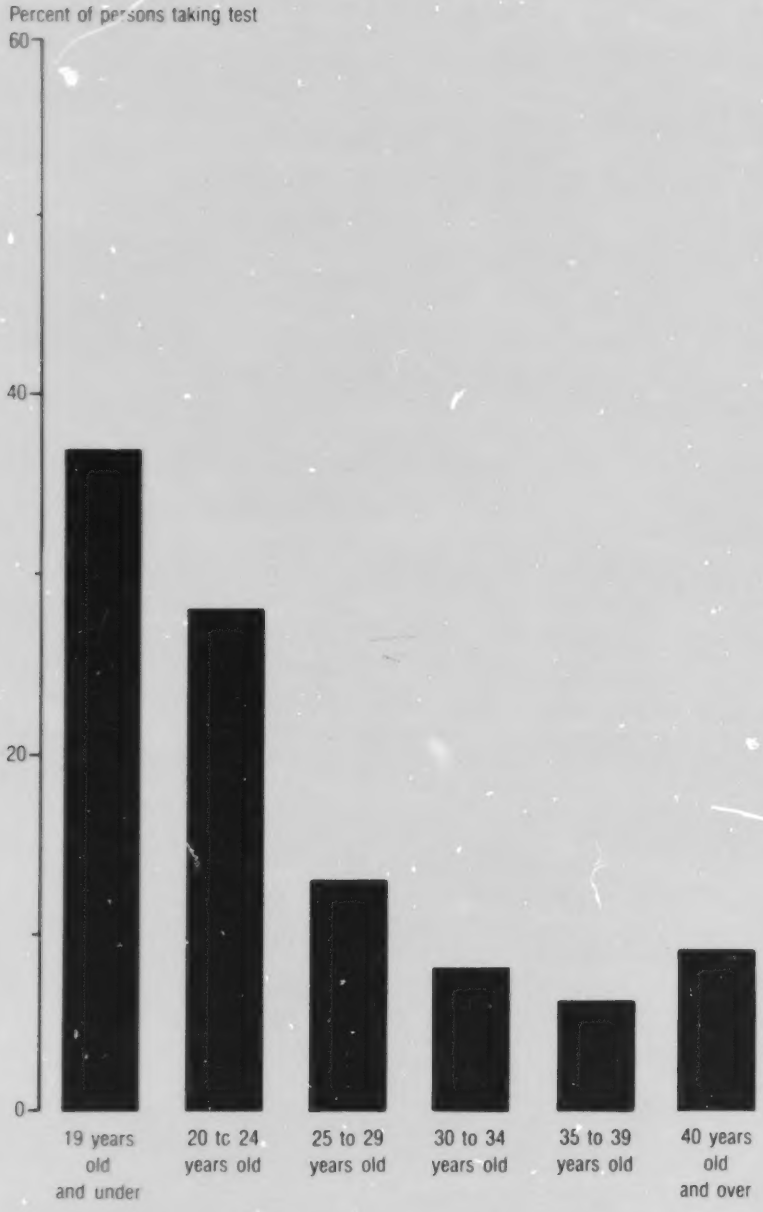
[2] United States, excluding outlying areas.

[3] Includes persons tested in outlying areas.

SOURCE: American Council on Education, The General Education Development Testing Service, *The GED Statistical Report*, various years.

Chart 4.7

Age Distribution of Persons Taking GED Tests: 1982



The largest single category of GED test takers was the 19-and-under age group. In 1982 almost two-thirds of the test takers were under 25 years old.

Chapter 5
Secondary Education: Student Flows, Course Participation, and State Requirements

Given the interest in the Nation's high schools generated by the National Commission on Excellence in Education (NCEE) report and recent others, this chapter highlights data on secondary education—the transition from high school, coursework participation, and State graduation requirements. The section on student flows begins the chapter by presenting information on recent high school dropouts and postsecondary plans of high school seniors. While it shows that graduating from high school is the norm, it presents the various reasons given by dropouts for not graduating. A further section on coursework provides data taken from actual high school transcripts on student participation in basic subjects. These data show the extent to which 1982 high school graduates fulfilled the curriculum requirements recommended by the NCEE. The increased use of computers in schools is also discussed. The chapter concludes with State-by-State comparisons of changing high school graduation requirements, the use of minimum-competency testing, and requirements by State universities for college admission.

Student Flows

Dropping Out

High school graduation marks an important transition point in the lives of American youth and provides a measure of performance in secondary education. For many, high school graduation is followed by enrollment in higher education or a postsecondary vocational/trade school. For others, high school graduation represents the end of formal education as they enter the work force full-time and assume adult responsibilities. For some students, however, this formal transition point is not reached, dropping out as they do before graduation.

The High School and Beyond Study provides a look at the progression of students from the sophomore year through the senior year of high school and into adult status. Almost 14 percent of 1980 high school sophomores left high school without a diploma sometime after the spring of their sophomore year (entry 5.1). Generally, male sophomores were more likely to drop out than females, 15 percent as compared with 13 percent. The tendency for more males than females to drop out was consistent within most subgroups except Hispanics and American Indians/Alaskan Natives, those in the general high school program, and the various self-reported grade groups. When the sophomores were grouped according to their average grades, males had comparable or lower dropout rates than females. This suggests that higher dropout rates for males are associated with their earning generally lower grades than females. Among the racial/ethnic groups, American Indians/Alaskan Natives showed the highest dropout rates, more than 29 percent. Hispanics and blacks (18 percent and 17 percent, respectively) had higher dropout rates than whites (12 percent), and Asian Americans (3 percent). Higher dropout rates were also associated with low socioeconomic status, poor academic performance, and participation in non-academic programs.

Reasons for Dropping Out

Data from the first follow-up survey of High School and Beyond are useful in suggesting some factors that may prompt students to leave school before graduation. In the first follow-up survey, students who dropped out of school after the spring of their sophomore year were asked in retrospect to give their reasons. White males most frequently indicated they did not like school, while minority males most often indicated poor grades as the reason, 46 percent and 31 percent, respectively (entry 5.2). White females indicated marriage and dislike for school about evenly, 36 percent and 34 percent, while minority females cited poor grades and pregnancy, 30 percent and 29 percent, respectively.

Postsecondary Education Plans

The great preponderance of high school students do graduate, and most plan further education. A comparison of the high school senior classes of 1972 and 1980 shows some differences in the educational expectations of these cohorts. For example, between 1972 and 1980, those few seniors not expecting to graduate and those not planning to continue their education increased proportionally among males from 16 percent to 21 percent, but decreased among females from 22 percent to 18 percent

(entry 5.3).[1] And while the percentage of high school seniors expecting to attain a 4-year degree decreased by more than 10 percentage points for males and females, the drop was offset by an increase in seniors expecting to attend graduate or professional school. The proportions expecting to do post-baccalaureate work increased from 16 percent to 21 percent for males and more than doubled for females from 9 percent to 20 percent.

Postsecondary Education Participation

An examination of actual postsecondary education participation rates substantiates the rise in female expectations. In 1972, 53 percent of females participated in some type of postsecondary education in the fall following high school graduation. By 1980, this percentage had risen to 56 percent (entry 5.4). This increase was consistent for females enrolled in both 4- and 2-year institutions; the rates at which females enrolled increased from 29 percent to 32 percent in 4-year institutions and from 15 percent to 19 percent in 2-year institutions.

Postsecondary participation rates remained generally stable across racial/ethnic, performance, and socioeconomic subgroups except for decreases among males and Hispanics. Overall entry rates for whites and blacks showed no change between 1972 and 1980, remaining at 55 percent and 47 percent, respectively. No significant differences were evident between 1972 and 1980 for the various performance groups, although high performers continued to display the highest rate of postsecondary school enrollment, 81 percent in 1980. Similarly, students with high socioeconomic backgrounds enrolled more frequently than students with middle or low socioeconomic status, 77 percent compared with 53 percent and 35 percent, respectively. These rates were not significantly different from those in 1972.

The decline in male postsecondary participation was confined to those in the high socioeconomic status (SES) group. Their participation directly following high school decreased by some 5 percentage points at 4-year institutions. High SES blacks also showed a decrease in participation in 4-year institutions. Hispanic participation rates appeared to have declined in 2-year and noncollegiate postsecondary schools.

Course Participation

Overall Coursework of Graduates

The high school transcripts of 1982 graduates show the average credit earned in selected subjects from freshman through senior year. Credit is expressed in Carnegie units, a unit being equivalent to completion of a 1-year course.

An examination of units earned shows that graduates of Catholic schools averaged more credits than graduates of public or non-Catholic private schools (entry 5.5). In all, Catholic school students earned about 23.8 units compared to 21.6 units by public school students and 21.3 units by other private school students.

Graduates in the academic program and the high performance group, and those with higher postsecondary education aspirations, took more mathematics and science courses than other graduates. Differences in coursework participation were particularly evident in science, where students in the high performance group took almost twice as much science as students in the low performance group, 2.9 units compared with 1.6. Students in academic programs took more science than students in general and vocational programs, 2.8 units vs. 1.9 and 1.6 units, respectively. Similar differences in science coursetaking were apparent between the lowest and highest educational aspiration groups.

Coursework Recommendations

In *A Nation at Risk*, the National Commission on Excellence in Education advocated stronger State and local high school graduation requirements than existed in 1983. Specifically, it recommended that students seeking a diploma be required to take 4 years of English, 3 years of

[1] As shown in the table, data are also available for 1982 high school seniors, but the inclusion of a "don't know" choice in 1982 reduces comparability with the earlier years.

mathematics, 3 years of science, 3 years of social studies, and one-half year of computer science. Additionally, the Commission urged that college-bound students be required to take 2 years of foreign language. In order to evaluate the degree to which high school graduates met these requirements, transcripts of 1982 high school graduates were analyzed as part of the High School and Beyond Study. According to the transcripts, fewer than 2 percent of high school graduates met the full set of curricular recommendations, including the foreign language credit, set forth by the Commission (entry 5.6). Even with the foreign language recommendation omitted, fewer than 3 percent of all graduates satisfied the Commission's standard for the non-college-bound. Excluding the computer science recommendation as well would raise this proportion to 13 percent. An analysis of individual subject areas shows that the social studies recommendation was met by the largest percentage of all graduates (65 percent) and the computer science recommendation by the smallest percentage (13 percent).

The type, size, and location of the school that graduates had attended were also examined in relation to the percentages fulfilling the recommendations. The type of high school—that is, whether it spanned the 9th through 12th grades or was a part of a combined elementary/secondary school—appeared to be unassociated with the overall percentage of graduates who met the Commission's recommendations. Yet, when school size was examined, graduates of schools with enrollments between 600 and 1,800 were more likely to have met the full set of recommendations for both the college-bound and non-college-bound than those who attended schools with smaller or larger enrollments. Differences by school size were, however, less evident in coursetaking in individual subject areas. Finally, school location showed some association with meeting the recommendations. High school graduates of 1982 in the Middle Atlantic region, for example, were the most likely to satisfy the various sets of curricular recommendations. So, too, were graduates from high schools in suburban areas, if only slightly more than graduates in other areas.

Differences were also apparent among students with varying characteristics. Smaller percentages of graduates meeting the Commission's recommendations were associated with lower educational aspirations (entry 5.7). This was most evident for students expecting to discontinue their formal education after graduation and for those planning to take some postsecondary education, but less than 4 years of college. Graduates expecting to attend 4 or more years of college were most likely to satisfy the curricular recommendations, although fewer than 4 percent met them all. Except for computer science, each subject area recommendation was met by at least half of the 1982 high school graduates aspiring to earn a college degree.

Academic Basics From Freshman Through Senior Year

Further analysis of student transcripts reveals that 1982 high school graduates took less coursework in academic basics (English, mathematics, science, and social studies) in their senior year than in earlier grades (entry 5.8). Although students, on the average, earned over 5 Carnegie credits each year, the credits in these academic subjects declined from 3.6 units in the 9th grade to 2.6 units in the 12th grade. This decline was typical for all students, regardless of race/ethnicity, socioeconomic status, or other student or school characteristic. Substantial differences were evident, however, among various groups in the number of units taken per year in these academic subjects. For example, whites generally earned more credits in academic basics than blacks and Hispanics. Likewise, students from a high socioeconomic background, those in academic programs, and those in Catholic schools earned more basic academic credits than students in other categories.

The decline in the total number of credits earned at successive grade levels was also evident for several selected subject matter areas, particularly mathematics and science. The average credit earned for mathematics was 0.9 unit in the 9th grade, but declined to only 0.4 unit in the 12th grade (entry 5.9). Similarly, the average credit earned for science was 0.7 unit in the 9th grade but only 0.3 unit in the 12th grade. In contrast, the average number of Carnegie units earned for English remained about the same over the 4 years.

Microcomputer Coursework

The slight increase in the average credit earned in computer science may be due to the increased availability of microcomputers in schools. The use of microcomputers rises from elementary through secondary levels, according to figures released recently by Quality Education Data, Incorporated (QED). A far greater percentage of high schools have micros than do elementary schools (entry 5.10). The use of micros in elementary schools took a great jump between 1982 and 1983. Elementary schools had more micros in 1983 than did junior high schools in 1982, while the use of microcomputers doubled at the junior high level and increased by 50 percent at the senior high level.

A survey conducted by Johns Hopkins University also provides information on the amount of time the average user spends on the computer per week. At the secondary level, a typical student learning programming used the computer 55 minutes during the week compared to 17 minutes used per week for students doing drills or remedial work. Microcomputers were also frequently used in secondary schools for word or data processing. The typical secondary school micro-user spent 30 minutes on a computer per week for editing and writing, or in connection with a science or electronics laboratory. While this was half the amount of time a programming student got, it was twice that given to students using the equipment for drills and practice.

State Requirements

Graduation Requirements

In 1980, 39 States and the District of Columbia required a designated number of Carnegie units for high school graduation, according to data released by the National Association of Secondary School Principals. In a telephone follow-up, NCES found that between 1980 and 1982, 22 States and the District of Columbia approved or proposed new high school graduation requirements (entry 5.11).[1] A few States proposed State-level requirements where there were none, and several others added to existing requirements. Some States that already required a minimum of 20 units did not enact any changes. Colorado approved a total of 18 units as necessary for high school graduation in 1982-83 where no State-level requirements had existed before. Indiana approved 3 additional units, effective in 1982-83, and Louisiana and North Carolina each approved 2 additional units. Eight States approved additional units effective sometime after 1982-83, while 13 States were considering changes or further revisions in requirements from the 1980 base.

A number of States have initiated changes in mathematics and science curriculum requirements for high school graduation since 1980. Alabama, the District of Columbia, and Idaho each approved 1 additional unit of mathematics for high school graduation, to become effective after 1983, while changes or revisions in mathematics requirements effective after 1983 were under consideration in 11 other States (entry 5.12). Both the District of Columbia and Oklahoma approved 1 additional unit in science as necessary for graduation from high school. Science requirements that would apply to graduates after 1983 were under study in nine other States.

Minimum-Competency Testing

In an effort to improve the quality of education in public schools, many States have adopted provisions requiring minimum-competency testing of students. By 1983, 40 States required such testing to insure students meet a designated level of proficiency as determined by State or local authorities, or both (entry 5.13). Of those States that reported the government level setting the standards, 21 set them at the State level, 10 at the local level, and 7 at both levels. Twenty-five States tested students below the 5th grade level, and nearly all 40 States reported testing above the 8th grade. Five States expected to use competency testing for grade promotion. At the same time, nearly half of the States planned to use testing as part of their high school graduation requirements, as a means to identify students needing remediation, or for other purposes. Fifteen States had already begun using testing for their graduating classes, and five more had plans to do so.

[1] An update of State requirements for high school graduation is available in the Education Commission of the States publication, *State Education Leader*, January 1984. It was not available at the time data entries for this report were being compiled.

State University Admissions Requirements

During the summer of 1982, the National Association of Secondary School Principals (NASSP) developed a survey to determine requirements for college admission to State universities. Revisions of these admissions policies could have a significant impact on the high school curriculum, causing more students to enroll in certain academic courses.

Admission requirements varied greatly from State to State, each State having established its own formula for admission. A high school diploma was sufficient in 18 States to allow admission to the State university system (entry 5.14). Some States, however, placed additional qualifications on entering students, such as adequate test scores or grade point averages. Revisions to college admission requirements for State universities were under study in 20 States. The course requirements most commonly increased were in mathematics and social sciences. While no State admissions requirements met the National Commission's recommendations for high school graduation, State university admission requirements came closest in Delaware, Iowa, North Carolina, and Vermont.

Table 5.1

Dropout Rates of 1980 High School Sophomores, by Sex and Selected Background Characteristics: Spring 1982

Background Characteristics	Total	Male	Female	Total	Male	Female
	Dropouts as Percent of Sophomores			Sample Size		
Total	**13.6**	**14.7**	**12.6**	28,119	13,905	14,214
Race/ethnicity						
White, non-Hispanic	**12.2**	13.0	11.5	18,545	9,162	9,383
Black, non-Hispanic	**17.0**	20.3	14.1	3,712	1,721	1,991
Hispanic	**18.0**	18.1	18.0	5,039	2,589	2,450
Asian or Pacific Islander	**3.1**	3.5	2.7	426	213	213
Socioeconomic status						
Low	**17.4**	17.8	17.1	7,057	3,143	3,914
Middle	**9.0**	9.6	8.3	11,836	5,822	6,014
High	**5.2**	7.0	3.2	5,876	3,141	2,735
Unknown	31.6	32.3	30.9	3,350	1,799	1,551
Self-reported grades						
Mostly A's	**2.9**	2.0	3.5	9,507	4,148	5,359
Mostly B's	**8.1**	7.8	8.4	11,559	5,553	6,006
Mostly C's	**18.5**	18.1	19.1	5,976	3,524	2,452
Mostly D's	**42.5**	41.7	44.1	834	547	287
Self-reported high school program						
Academic	**4.0**	4.5	3.6	8,831	4,144	4,687
General	**12.9**	12.7	13.0	11,359	5,608	5,751
Vocational	**15.1**	16.9	13.2	5,119	2,622	2,497
Community type						
Urban	**18.9**	20.8	17.0	6,384	3,080	3,304
Suburban	**11.8**	12.5	11.0	13,760	6,799	6,961
Rural	**12.8**	13.6	12.0	7,975	4,026	3,949
Region[1]						
Northeast	**11.3**	13.4	9.0	6,282	3,092	3,189
North Central	**12.0**	12.2	11.7	5,720	2,808	2,912
South	**15.2**	16.4	14.0	11,068	5,455	5,613
West	**16.6**	17.0	16.3	5,050	2,550	2,500
Control of school						
Public	**14.5**	15.5	13.6	24,611	12,200	12,411
Catholic	**2.3**	3.2	1.6	2,616	1,167	1,449
Other private	(2)	(2)	(2)	—	—	—

—Not applicable.

[1]The regions correspond to Bureau of the Census definitions. See the Definitions of Selected Terms in the Appendix.

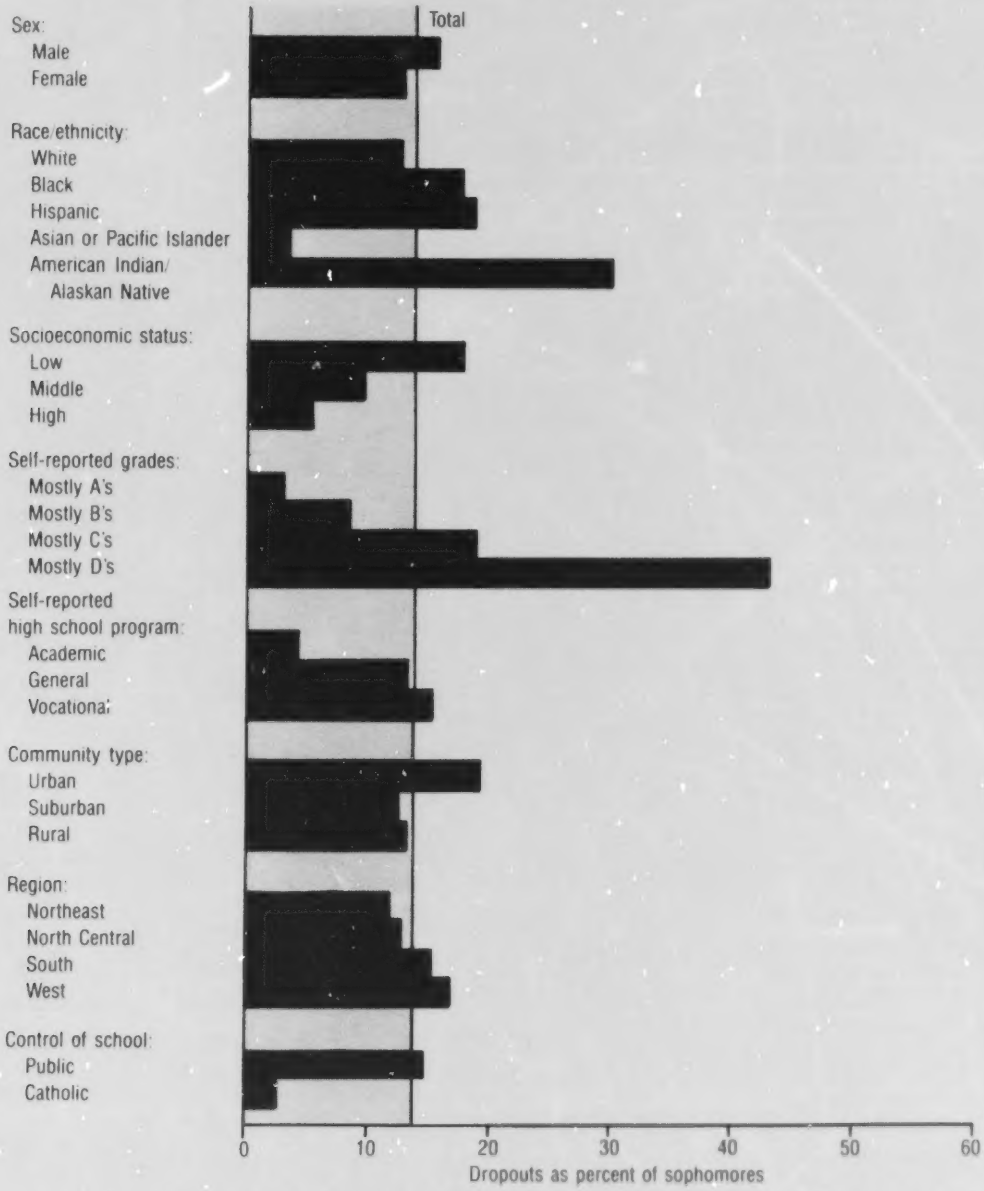
[2]Small sample size precludes showing percents.

NOTE: The standard error of the difference between two percentages (d) can be approximated by taking the square root of the sum of the standard errors for p_1 and p_2. That is, s.e. (d) = $[s.e.(p_1)^2 + s.e.(p_2)^2]^{1/2}$, where s.e. (p) = $D[p(100-p)/n]^{1/2}$, n is the sample size, and D is a correction factor estimated to be 1.6. The above approximation generally is conservative.

SOURCE: U.S. Department of Education, National Center for Education Statistics. "High School Dropouts: Descriptive Information from High School and Beyond." Bulletin, NCES 83-221b, November 1983.

Chart 5.1

Dropout Rates of 1980 High School Sophomores



Among the sophomore class of 1980, American Indians/Alaskan Natives had the highest dropout rate (29 percent) of any racial/ethnic group. Higher dropout rates were also associated with low socioeconomic status, poor academic performance, and enrollment in non-academic programs.

Table 5.2

Reasons Cited by 1980 Sophomore Dropouts for Leaving High School Before Graduation, by Sex and Race/Ethnicity: Spring 1982

Reasons[1]	Total	Male			Female		
		Total	White[2]	Minority[3]	Total	White[2]	Minority[3]
				Percent			
School-related							
School was not for me	33 1	34 8	**45.6**	**14.8**	31 1	**34.1**	**24.9**
Had poor grades	33 0	35 9	**38.4**	**31.2**	29 7	**39.0**	**30.0**
Couldn t get along with teachers	15 5	20 6	**19.8**	**22.0**	9 5	**10.2**	**8.1**
Expelled or suspended	9 5	13 0	**12.3**	**14.3**	5 3	**6.3**	**3.2**
Didn t get into desired program	6 1	7 5	**4.7**	**12.8**	4 5	**4.2**	**5.0**
School grounds too dangerous	2 3	2 7	2 9	2 2	1 7	1 1	3 1
Family-related							
Married or planned to get married	17 8	6 9	**7.6**	**5.5**	30 7	**36.4**	**19.2**
Had to support family	11 1	13 6	**9.3**	**21.5**	8 3	**7.1**	**10.6**
Was pregnant	10 9	—	—	—	23 4	**20.5**	**29.2**
Peer-related							
Couldn t get along with students	5 6	5 4	4 7	6 6	5 9	6 0	5 7
Friends were dropping out	4 6	6 5	6 7	6 0	2 4	2 7	1 7
Health-related							
Illness or disability	5 5	4 6	4 6	4 7	6 5	5 3	9 0
Other							
Offered job and chose to work	19 5	26 9	**28.4**	**24.1**	10 7	**9.7**	**12.8**
Wanted to travel	6 8	7 0	7 3	6 5	6 5	8 5	2 4
Wanted to enter military	4 3	7 2	6 7	8 3	8	6	1 1
Moved too far from school	3 6	2 2	2 2	2 2	5 3	5 2	5 5
Sample size	2 289	1,188	648	537	1 101	615	486

—Not applicable

[1]Students might report more than one reason

[2]Includes Asian Americans, only 18 in number, because they responded with similar reasons for dropping out

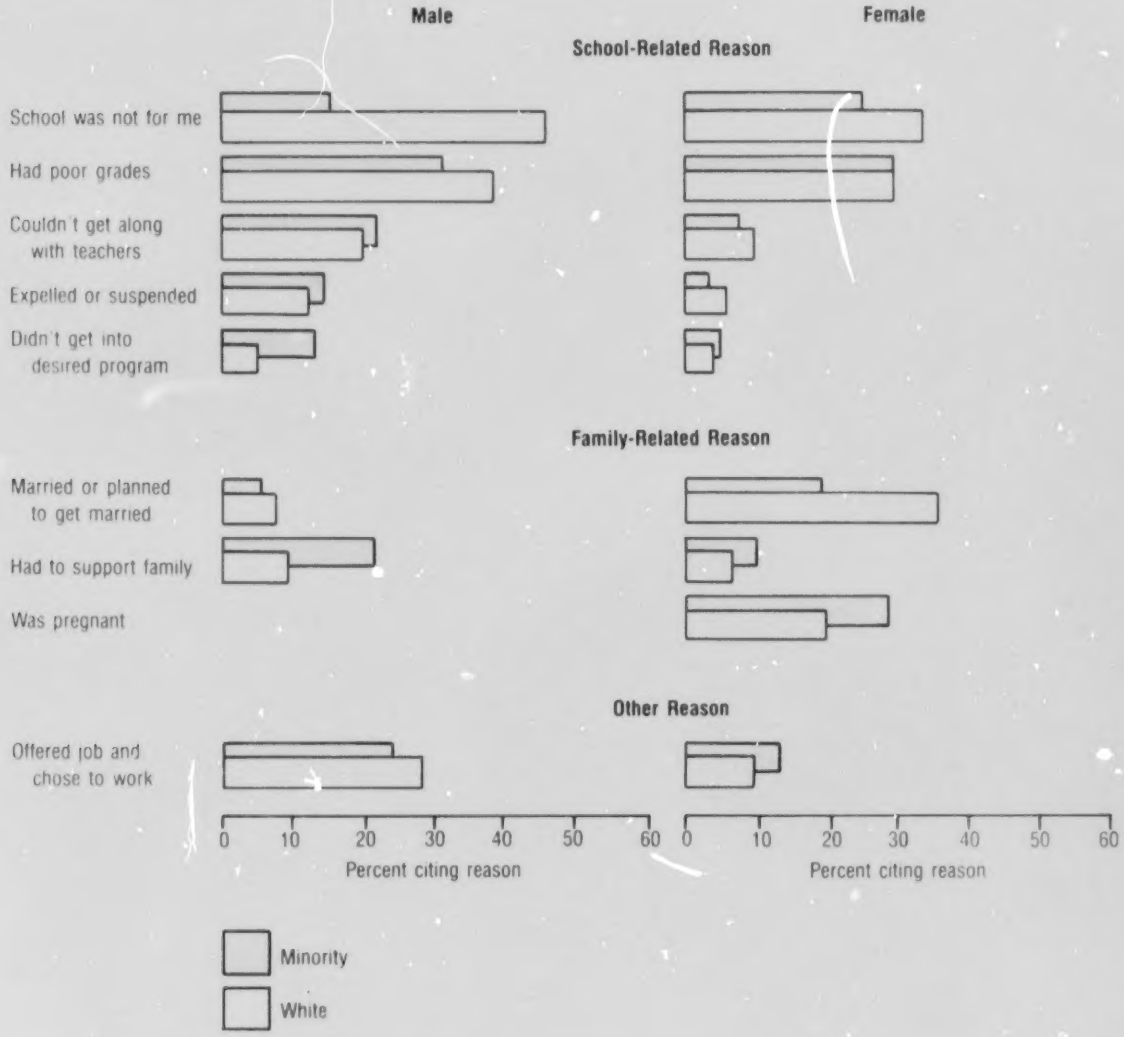
[3]Includes Hispanics, blacks, and American Indians/Alaskan Natives

NOTE: The standard error of the difference between two percentages (d) can be approximated by taking the square root of the sum of the standard errors for p_1 and p_2. That is, $s.e.(d) = [s.e.(p_1)^2 + s.e.(p_2)^2]^{1/2}$, where $s.e.(p) = D[p(100-p)/n]^{1/2}$, n is the sample size, and D is a correction factor estimated to be 1.6. The above approximation generally is conservative.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "High School Dropouts: Descriptive Information from High School and Beyond," Bulletin, NCES 83-221b, November 1983.

Chart 5.2

Reasons Cited by 1980 Sophomore Dropouts for Leaving High School Before Graduation



When 1980 sophomore dropouts were asked why they left high school, white males most frequently indicated they did not like school. Minority males most often cited poor grades; white females indicated marriage and a dislike for school; and minority females cited poor grades and pregnancy.

Table 5.3

Distribution of High School Seniors Expecting to Attain Designated Levels of Education, by Sex: Spring 1972, 1980, and 1982

Highest Level Expected*	All Seniors			Males			Females		
	1972	1980	1982	1972	1980	1982	1972	1980	1982
	Percentage Distribution								
Total	100.0	100.0	100.0	**100.0**	**100.0**	100.0	**100.0**	**100.0**	100.0
Less than high school graduation	2.2	.4	2.5	**2.4**	**.6**	2.9	**2.0**	**.3**	2.1
High school graduation only	16.7	19.4	18.0	**13.1**	**20.4**	21.0	**20.2**	**17.9**	15.1
Vocational, trade, or business school	18.0	19.6	19.1	**17.4**	**20.1**	20.0	**18.6**	**18.9**	18.3
Junior college	12.8	15.1	16.5	**11.5**	**11.7**	13.8	**14.1**	**18.1**	19.2
4-year college or university	37.6	25.3	19.1	**39.2**	**26.0**	18.4	**36.0**	**25.1**	19.8
Graduate or professional school	12.6	20.2	15.6	**16.3**	**21.2**	15.1	**9.1**	**19.8**	16.1
Don't know	—	—	9.1	—	—	8.8	—	—	9.4

—Not applicable.

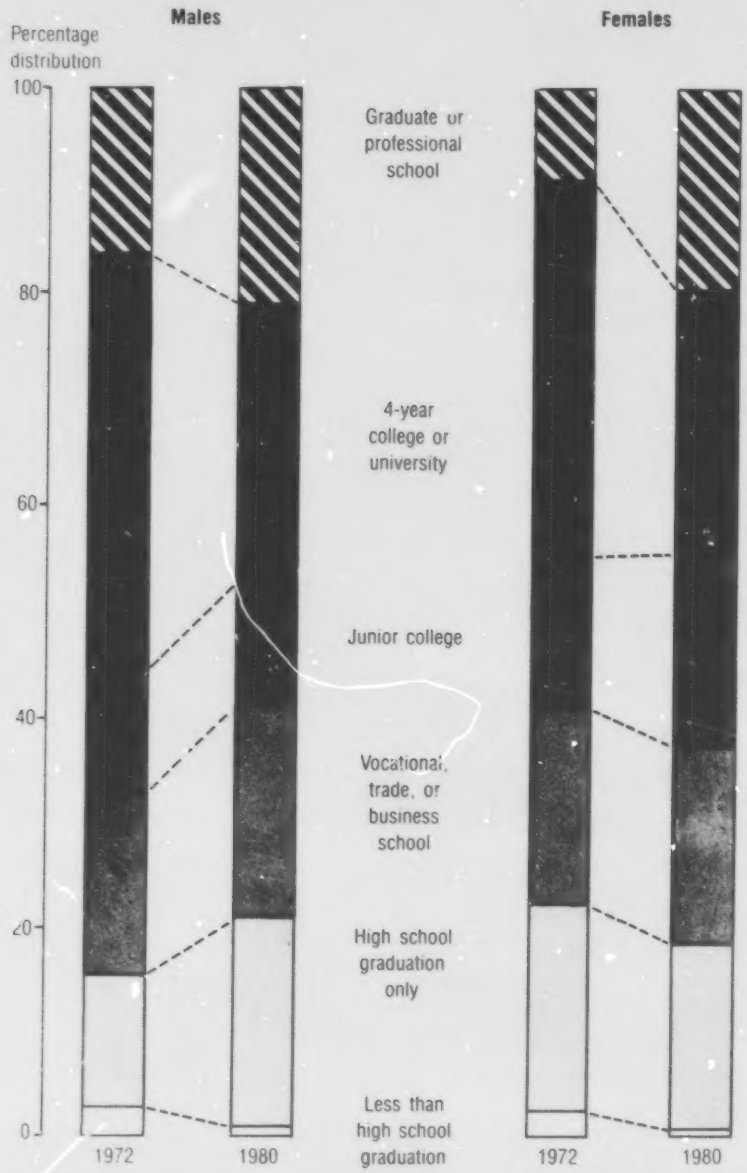
*The question formats and answer choices for 1972, 1980, and 1982 seniors were not identical. The 1972 questionnaire asked the students to indicate the highest level of education they planned to attain. The 1980 and 1982 questionnaires asked, "As things stand now, how far in school do you think you will get?" While the wording of the answer choices in 1972 and 1980 was more or less comparable, the inclusion of a "don't know" choice in 1982 reduces comparability with the earlier years.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *High School Seniors: A Comparative Study of the Classes of 1972 and 1980*, forthcoming, and unpublished tabulations (January 1983).

Chart 5.3

Distribution of 1972 and 1980 High School Seniors Expecting to Attain Designated Levels of Education



The percentage of high school seniors expecting no further education increased for males between 1972 and 1980 from 16 percent to 21 percent, but declined for females from 22 percent to 18 percent. The percentage of female seniors expecting to attend graduate or professional school more than doubled during that same period, increasing from 9 percent in 1972 to 20 percent in 1980.

Table 5.4

Postsecondary Education Participation Rates of High School Graduates Immediately Following Graduation, by Socioeconomic Status (SES), Sex, Race/Ethnicity, and Academic Performance: Fall 1972 and Fall 1980

Characteristic	Percent Participating in Fall 1972				Percent Participating in Fall 1980			
	Total[1]	4-Year Institutions	2-Year Institutions	Other[2]	Total[1]	4-Year Institutions	2-Year Institutions	Other[2]
All graduates	**53**	30	16	7	**54**	31	18	5
Male	**54**	31	17	6	**49**	30	16	4
Female	**53**	29	15	9	**56**	32	19	6
White, non-Hispanic	**55**	32	16	7	**55**	33	18	5
Black, non-Hispanic	**47**	26	12	9	**47**	30	14	5
Hispanic	**46**	16	21	8	**40**	16	18	5
Low performer	**30**	8	12	10	**27**	9	13	6
Median performer	**53**	26	20	8	**55**	29	22	5
High performer	**79**	60	15	4	**81**	65	15	3
Low SES	**34**	14	11	8	**35**	17	15	5
Male	33	15	12	6	32	16	14	4
Female	35	14	11	10	37	17	15	5
White, non-Hispanic	31	12	11	8	33	15	15	5
Black, non-Hispanic	39	20	10	10	41	24	13	4
Hispanic	41	15	18	8	32	13	14	5
Low performer	27	8	10	9	23	8	10	6
Median performer	36	16	11	9	41	19	19	4
High performer	62	41	18	4	62	44	16	3
Middle SES	**51**	25	18	8	**53**	30	19	5
Male	51	26	18	7	48	28	18	3
Female	50	24	16	10	58	31	21	6
White, non-Hispanic	51	25	18	8	54	30	19	5
Black, non-Hispanic	55	34	14	8	53	36	14	4
Hispanic	51	17	25	9	46	18	23	5
Low performer	39	8	12	10	28	10	14	6
Median performer	51	22	20	9	54	28	22	5
High performer	73	49	19	5	80	60	19	3
High SES	**79**	57	18	4	**77**	55	19	4
Male	78	56	18	3	73	51	18	4
Female	80	57	17	6	82	61	20	3
White, non-Hispanic	79	57	18	4	78	56	19	4
Black, non-Hispanic	81	53	21	8	70	48	21	2
Hispanic	(3)	(3)	(3)	(3)	74	45	20	10
Low performer	46	16	22	9	49	18	23	9
Median performer	74	43	25	6	75	44	28	4
High performer	89	76	11	2	86	75	10	3

[1] Details may not add to totals because of rounding and because respondents in 1980 could have indicated that they attended more than one type of postsecondary institution.

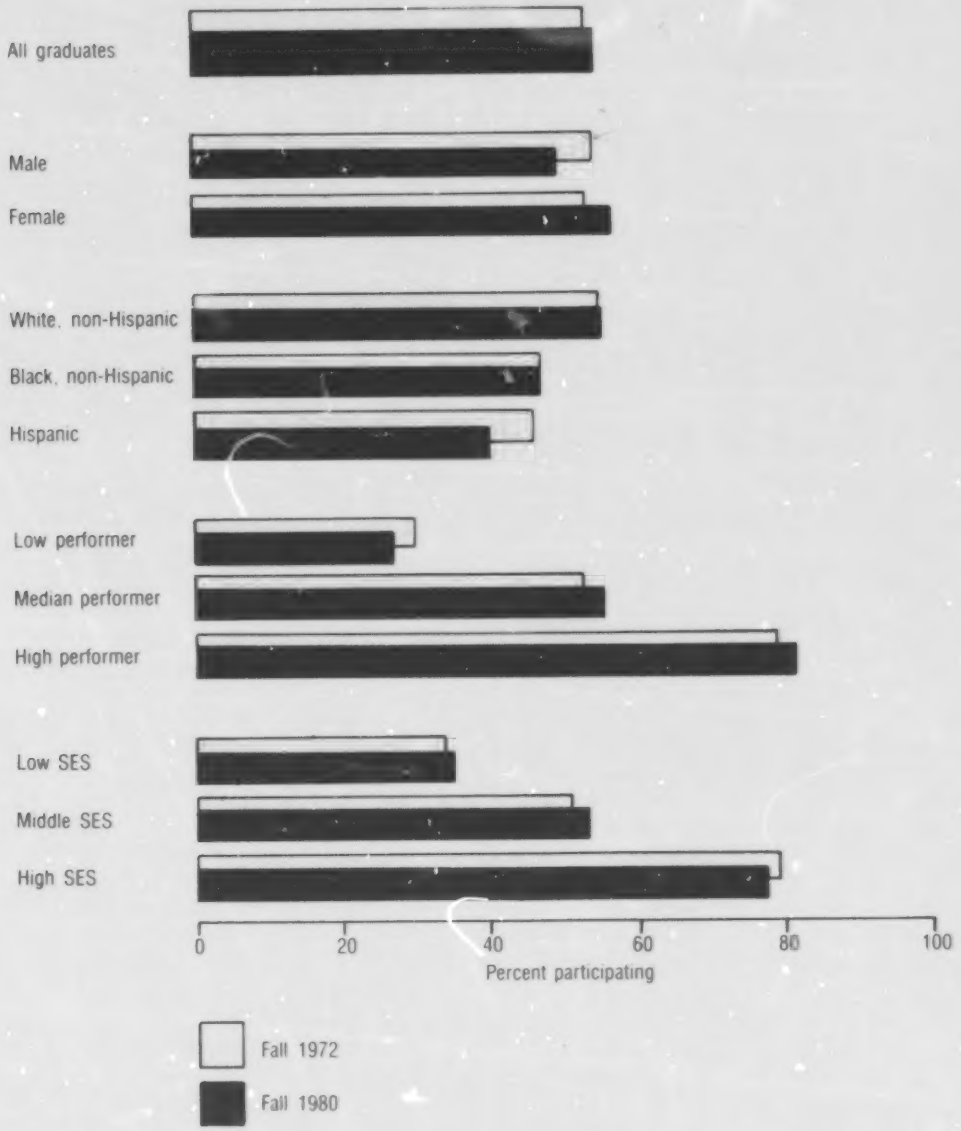
[2] Includes vocational, trade, and business schools and schools that could not be classified otherwise.

[3] Small sample size precludes showing percents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Longitudinal Study of the High School Class of 1972 and High School and Beyond, unpublished tabulations (December 1983).

Chart 5.4

Postsecondary Education Participation of High School Graduates Immediately Following Graduation



While postsecondary enrollment rates of recent high school graduates remained stable overall between fall 1972 and fall 1980, rates dropped slightly among males and Hispanics and rose among females.

Table 5.5

Average Number of Carnegie Units Earned by 1982 High School Graduates in Selected Subject Areas, by Control of School, Sex, Race/Ethnicity, Performance Group, Self-Reported High School Program, and Educational Aspiration: 1982

Characteristic	Average Units Earned in All Subjects	Average Units Earned in Selected Subject Areas					
		English	Mathematics	Science	Social Studies	Foreign Language	Computer Science
All graduates	21.8	3.8	**2.6**	**2.1**	3.1	1.1	0.1
Control of school:							
Public	21.6	3.8	**2.5**	**2.1**	3.0	1.0	.1
Catholic	23.8	4.2	**3.3**	**2.5**	3.5	2.0	.1
Other private[1]	21.3	4.0	3.1	2.6	3.4	1.9	(2)
Sex:							
Male	21.6	3.7	2.6	2.3	3.1	.9	.1
Female	22.0	3.9	2.5	2.1	3.1	1.2	.1
Race/ethnicity:							
White, non-Hispanic	21.9	3.8	2.7	2.3	3.1	1.1	.1
Black, non-Hispanic	21.1	3.8	2.4	2.0	2.9	.7	.1
Hispanic	21.7	3.7	2.2	1.8	3.0	.8	.1
Performance group:							
Low	20.8	3.5	**1.9**	**1.6**	2.8	.3	(2)
Middle	21.6	3.8	**2.4**	**2.0**	3.1	.8	.1
High	22.6	4.0	**3.4**	**2.9**	3.2	1.9	.2
Self-reported high school program:							
Academic	22.5	4.0	**3.3**	**2.8**	3.2	1.8	.1
General	21.3	3.7	**2.2**	**1.9**	3.1	.6	.1
Vocational	21.4	3.6	**2.0**	**1.6**	2.9	.4	.1
Educational aspiration:							
High school	20.9	3.6	**2.0**	**1.7**	2.9	.4	(2)
Vocational training	21.5	3.6	**2.1**	**1.7**	3.1	.4	.1
Some college	21.8	3.8	**2.5**	**2.0**	3.1	1.0	.1
College graduate	22.4	4.0	**3.2**	**2.6**	3.2	1.5	.2
Postgraduate	22.4	4.0	**3.3**	**2.9**	3.2	1.9	.1

[1] Care should be taken when making comparisons with the "other private" category due to small sample size and a high non-response rate.

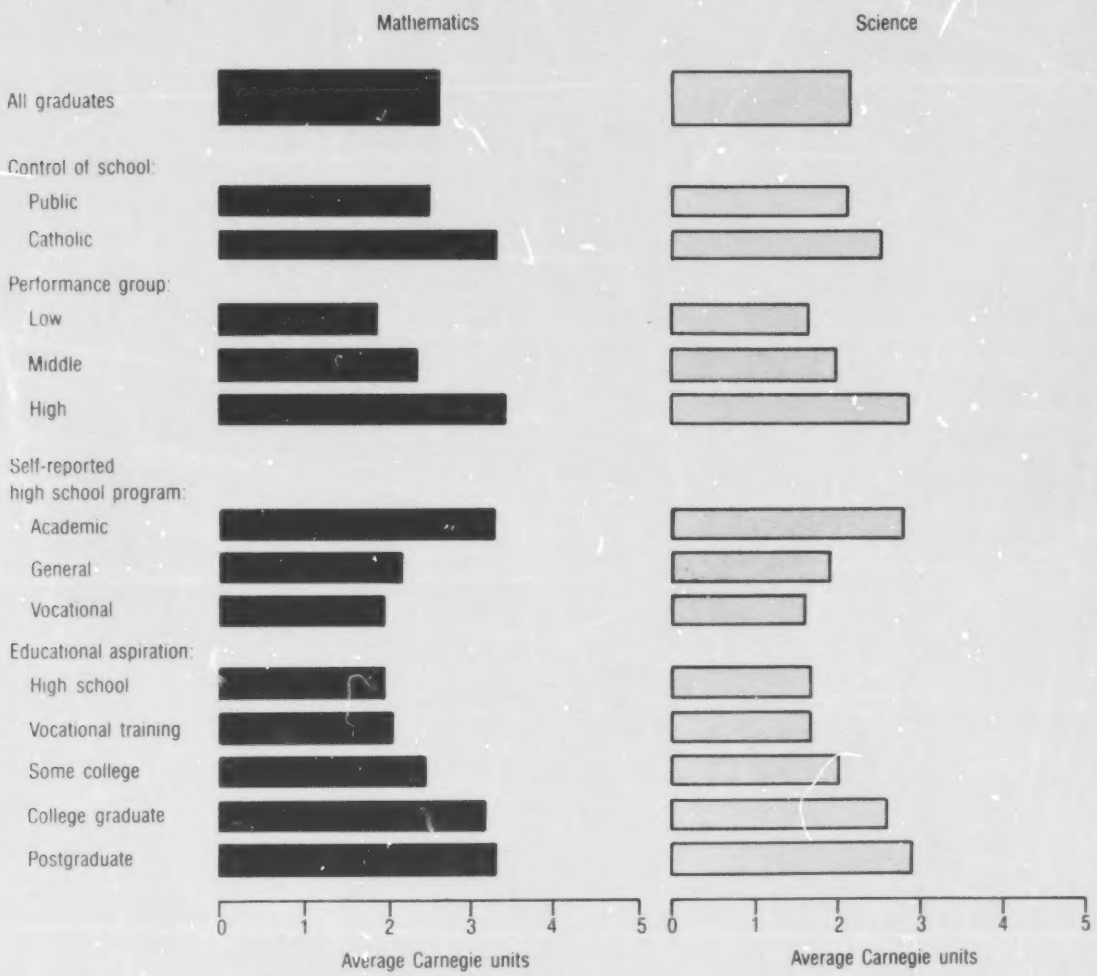
[2] Less than 0.05 unit.

NOTE: The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Study, transcript file, unpublished tabulations (September 1983).

Chart 5.5

Carnegie Units Earned in Mathematics and Science by 1982 High School Graduates



Graduates of Catholic high schools in 1982 generally earned more math and science credits than graduates of public schools. Additional math and science coursework was associated with academic and high performance subgroups, and with higher postsecondary educational aspirations.

Table 5.6

Percent of 1982 High School Graduates Who Met Curricular Recommendations of the National Commission on Excellence in Education, by Subject Area and Selected School Characteristics: 1982

Characteristic	All Recommendations[1]	All Except Foreign Language	All Except Computer Science	All Except Foreign Language and Computer Science	English (4 years)	Mathematics (3 years)	Science (3 years)	Social Studies (3 years)	Foreign Language (2 years)	Computer Science (0.5 years)
All graduates	**1.8**	2.6	8.4	**13.4**	58.6	46.2	30.4	65.4	33.2	12.7
Grade span of school										
Kindergarten to 12th grade	1.5	2.8	9.2	15.3	67.1	45.0	33.9	73.1	28.2	10.7
9th to 12th grade	1.8	2.4	8.8	12.9	57.7	46.6	30.0	64.3	36.2	12.5
10th to 12th grade	2.0	2.9	7.2	13.0	55.2	46.5	29.1	63.0	30.3	14.5
School enrollment size										
Less than 600	1.0	1.8	9.1	14.8	65.9	44.1	32.8	68.4	28.5	7.4
600 to 1,800	2.4	3.4	9.2	13.4	57.8	47.5	30.6	65.2	34.6	14.4
More than 1,800	1.5	1.9	7.0	12.2	53.2	46.0	28.9	63.8	35.8	13.4
Region[2]										
New England	**3.6**	4.0	14.7	**16.8**	65.9	65.3	45.5	55.2	61.8	18.0
Middle Atlantic	**5.3**	5.8	21.1	**25.3**	73.4	55.1	45.4	81.8	51.5	15.8
South Atlantic	**1.3**	1.5	10.7	**15.4**	65.5	48.8	30.5	63.2	31.6	10.3
East South Central	**.1**	.7	2.6	**10.9**	86.1	40.8	26.9	56.8	16.0	5.6
West South Central	**.2**	.8	4.5	**16.2**	72.8	43.6	25.4	64.3	14.5	6.6
East North Central	**.8**	1.6	3.9	**7.0**	42.2	40.6	27.0	54.1	29.7	14.9
West North Central	**1.4**	6.0	4.0	**12.7**	47.5	46.2	29.7	79.1	17.7	17.8
Mountain	**1.2**	1.7	1.6	**7.0**	43.6	30.8	22.2	58.1	19.4	11.6
Pacific	**.8**	.9	4.9	**6.0**	44.2	41.8	18.0	70.4	41.2	10.1
Community type										
Urban	1.8	2.1	8.9	12.2	59.9	45.3	28.0	64.3	35.8	13.0
Suburban	2.0	3.0	9.1	14.1	56.9	50.2	32.1	66.4	38.1	15.0
Rural	1.5	2.2	7.1	12.9	60.5	40.3	29.1	64.6	24.0	8.8

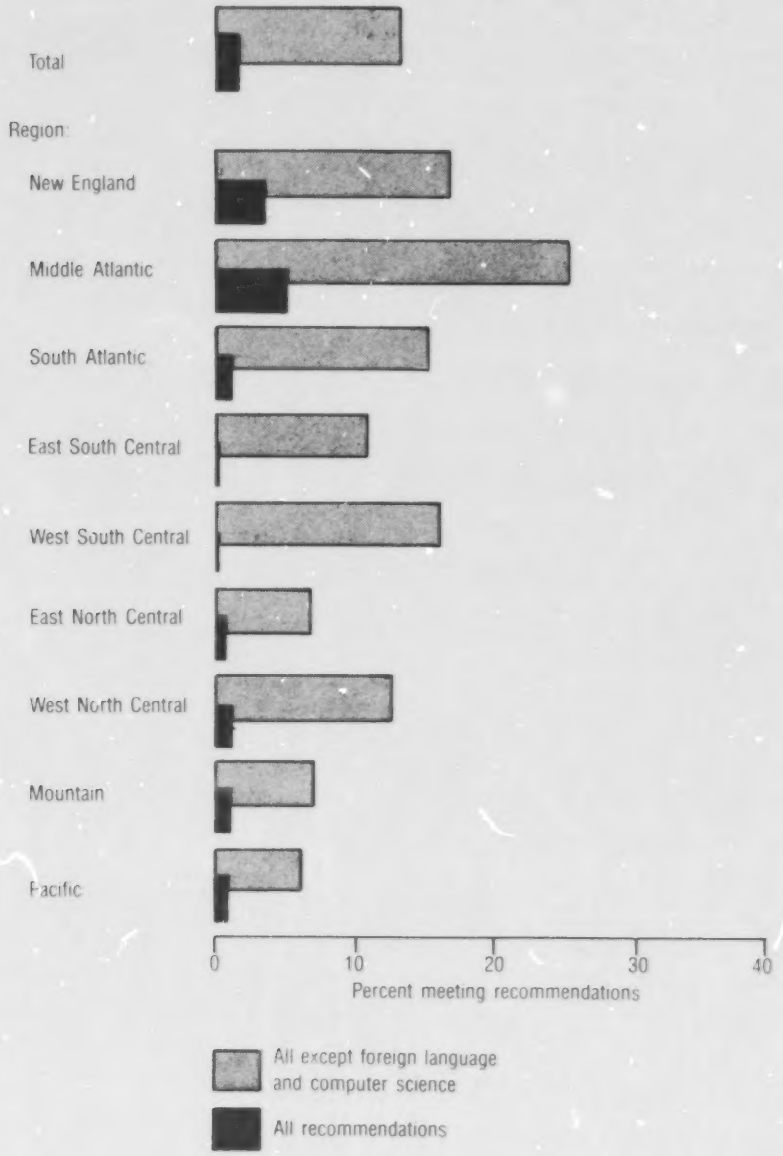
[1]The National Commission on Excellence in Education recommended that all students seeking a high school diploma take the following curriculum during their 4 years of high school: (a) 4 years of English, (b) 3 years of mathematics, (c) 3 years of science, (d) 3 years of social studies, and (e) a half year of computer science. For college-bound students, 2 years of foreign language in high school were strongly recommended.

[2]The regions correspond to the Bureau of the Census definitions. See the Definitions of Selected Terms in the Appendix.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Study, transcript file, unpublished tabulations (October 1983).

Chart 5.6

Percent of 1982 High School Graduates Who Met Various Sets of Curricular Recommendations of the National Commission on Excellence in Education



High school graduates of 1982 in the Middle Atlantic region were most likely to have met various recommendations made by the National Commission on Excellence in Education.

Table 5.7

Percent of 1982 High School Graduates Who Met Curricular Recommendations of the National Commission on Excellence in Education, by Educational Aspiration and Subject Area: 1982

Recommendation*	All Graduates	Educational Aspiration			
		High School Graduation	Some Postsecondary but Less Than 4 Years of College	4 or More Years of College	Aspiration Not Indicated
All recommendations	**1.8**	0.5	0.4	**3.7**	0.5
All except foreign language	**2.6**	.6	1.0	**5.0**	1.1
All except computer science	**8.4**	2.2	4.2	**15.6**	4.2
All except foreign language and computer science	**13.4**	4.8	8.0	**22.6**	8.7
English (4 years)	**58.6**	50.7	54.3	**66.5**	55.0
Mathematics (3 years)	**46.2**	20.3	33.2	**71.4**	32.7
Science (3 years)	**30.4**	12.4	19.3	**49.9**	20.0
Social studies (3 years)	**65.4**	60.2	63.8	**69.1**	65.9
Foreign language (2 years)	**33.2**	12.1	21.0	**55.7**	18.7
Computer science (0.5 years)	**12.7**	5.7	10.4	**18.2**	10.1

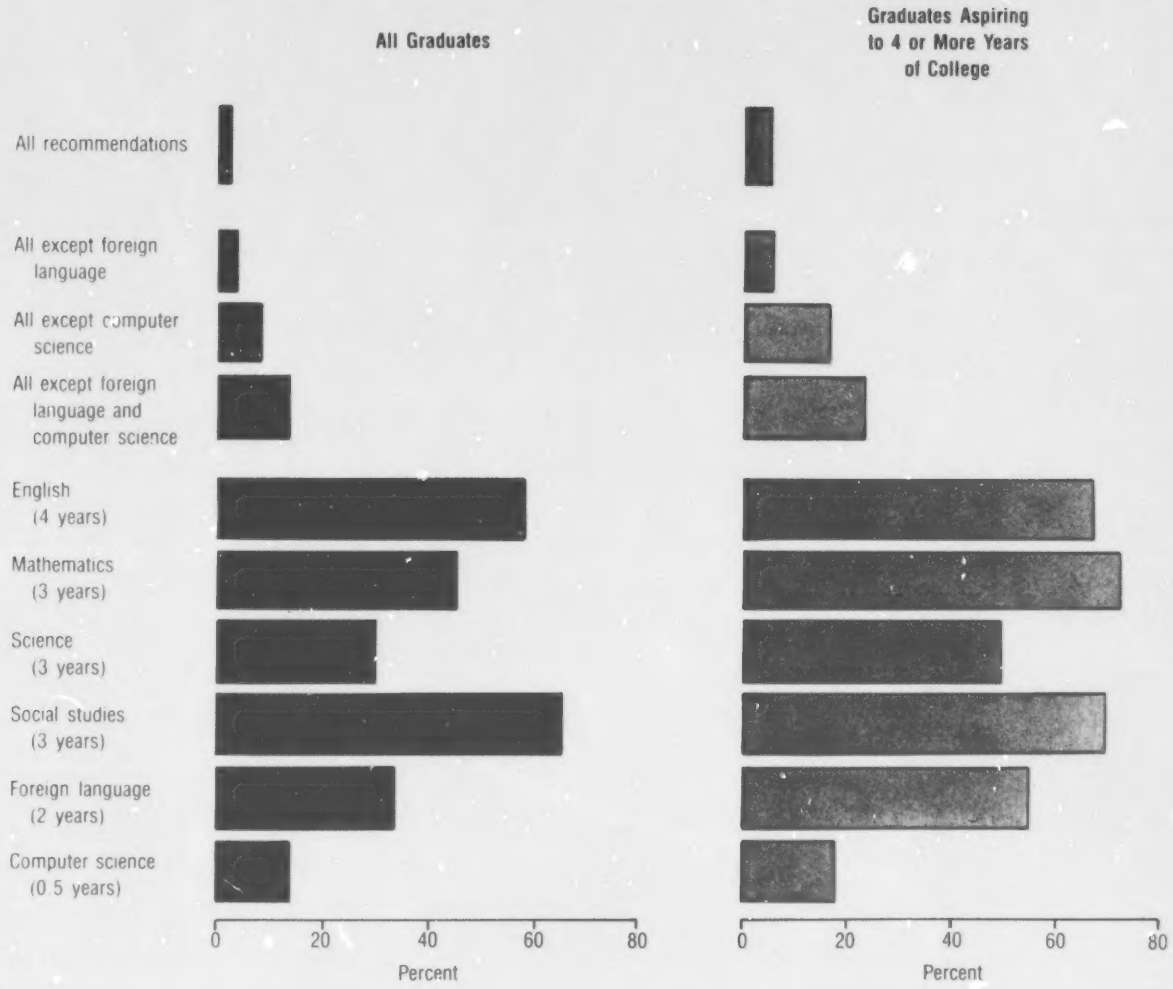
*The National Commission on Excellence in Education recommended that all students seeking a high school diploma take the following curriculum during their 4 years of high school: (a) 4 years of English; (b) 3 years of mathematics; (c) 3 years of science; (d) 3 years of social studies; and (e) a half year of computer science. For college-bound students, 2 years of foreign language in high school were strongly recommended.

NOTE: The standard errors for this table have been computed and are provided in the Data Sources in the Appendix.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Study, transcript file, unpublished tabulations (July 1983).

Chart 5.7

Percent of 1982 High School Graduates Who Met Curricular Recommendations of the National Commission on Excellence in Education, by Educational Aspiration



Of the 1982 high school graduates, college aspirants were most likely to have met the curricular recommendations of the National Commission on Excellence in Education.

Table 5.8

Average Number of Carnegie Units Earned by 1982 High School Graduates in Selected Academic Subjects, by Grade Level and Selected Background Characteristics: 1982

Characteristic	Average Units Earned in All Subjects	Average Units Earned in Selected Academic Subjects Only[1]				
			Grade in School			
		Total	9th Grade	10th Grade	11th Grade	12th Grade
All graduates	21.8	12.9	3.6	3.5	3.2	2.6
Control of school						
Public	21.5	12.5	3.5	3.4	3.2	2.5
Catholic	24.0	15.7	4.3	4.4	3.9	3.1
Other private	21.1	15.3	4.1	4.2	4.0	3.1
Race/ethnicity						
White, non-Hispanic	21.9	13.2	3.7	3.6	3.3	2.6
Black, non-Hispanic	21.1	11.9	3.2	3.2	3.0	2.5
Hispanic	21.7	11.7	3.3	3.2	2.9	2.2
Socioeconomic status						
Low	21.3	11.5	3.4	3.2	2.8	2.2
Middle	21.8	12.7	3.5	3.5	3.2	2.5
High	22.3	14.7	3.9	4.0	3.8	3.0
Self-reported high school program						
Academic	22.5	15.3	**4.0**	**4.1**	**4.0**	**3.3**
General	21.3	11.7	**3.3**	**3.2**	**2.9**	**2.3**
Vocational	21.4	10.7	**3.4**	**3.0**	**2.5**	**1.8**
Region						
Northeast	22.0	14.4	4.0	4.0	3.6	2.8
North Central	21.5	12.6	3.6	3.5	3.1	2.5
South	21.5	12.2	3.4	3.3	3.1	2.5
West	22.4	12.2	3.3	3.2	3.2	2.5

[1] Includes English, mathematics, science, and social studies.

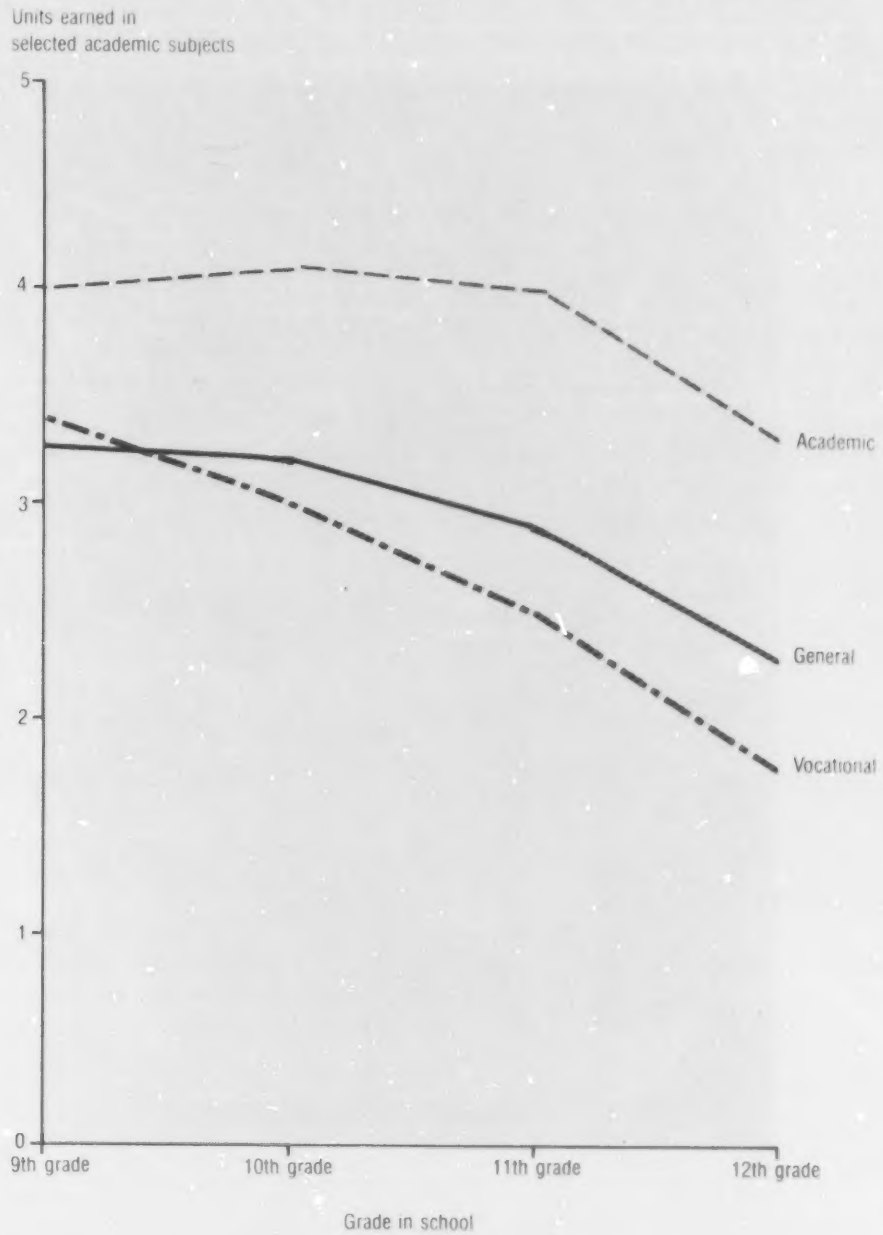
Care should be taken when making comparisons with the "other private" category due to small sample size and a high non-response rate.

NOTE: The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Study, transcript file, unpublished tabulations (October 1983).

Chart 5.8

Average Number of Carnegie Units Earned in Selected Academic Subjects by 1982 High School Graduates, by Self-Reported Program



High school graduates of 1982 took less coursework in academic basics in their senior year than in earlier grades, regardless of their program.

Table 5.9

Average Number of Carnegie Units Earned by 1982 High School Graduates, by Grade Level and Subject Area: 1982

Subject Area	Total	Grade in School			
		9th Grade	10th Grade	11th Grade	12th Grade
English	3.8	1.0	1.0	1.0	0.9
Mathematics	2.6	.9	.8	.6	.4
Science	2.2	.7	.7	.4	.3
Social studies	3.1	.7	.6	1.0	.8
Foreign language	1.1	.3	.4	.2	.1
Computer science	.1	(*)	(*)	(*)	.1

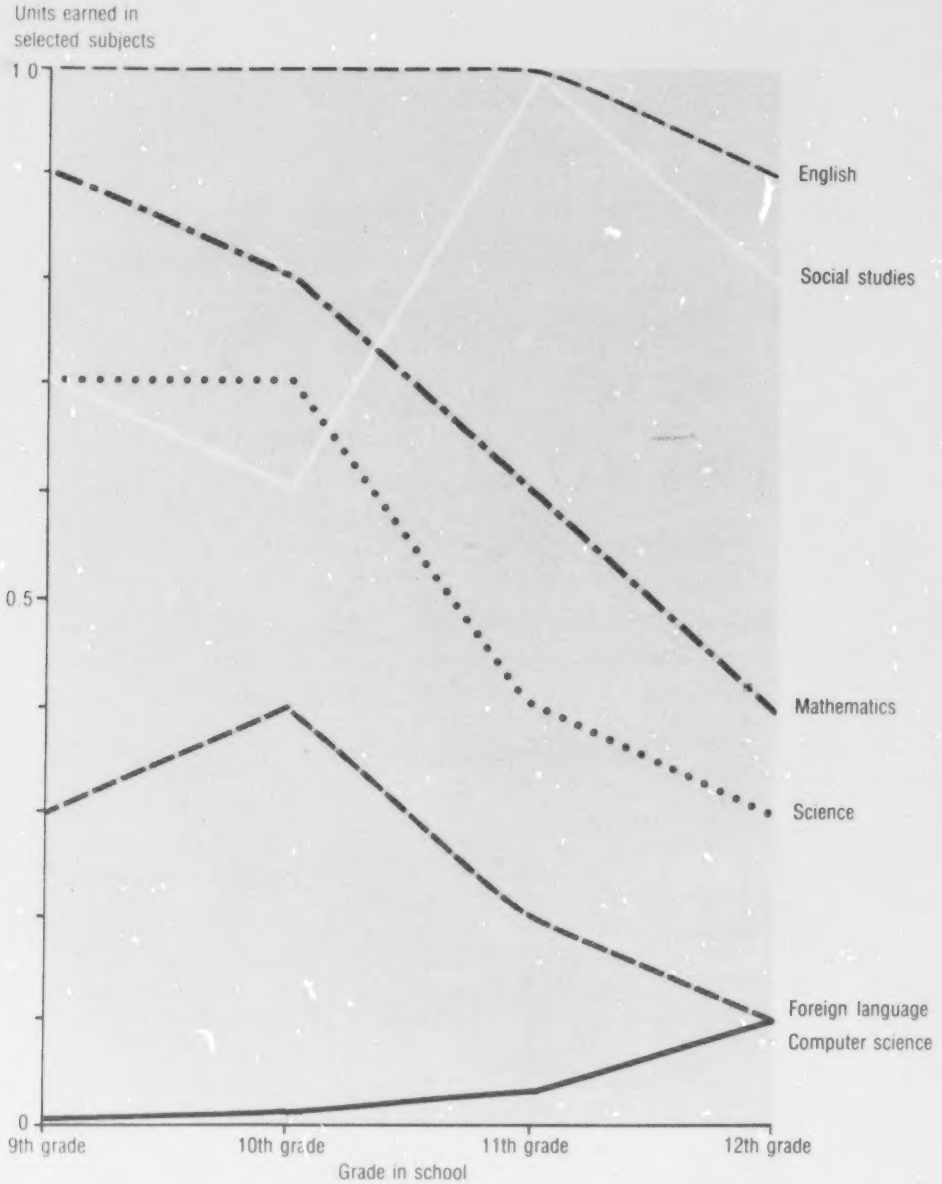
*Less than 0.05 unit.

NOTE: The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Study, transcript file, unpublished tabulations (October 1983).

Chart 5.9

Average Number of Carnegie Units Earned in Selected Subjects by 1982 High School Graduates



High school graduates averaged half the number of mathematics and science credits in their senior year as in their freshman year.

Table 5.10

Change From 1982 in Schools Using Microcomputers and Weekly Use of Microcomputers in Elementary and Secondary Schools, by Type of Activity and Level: 1983

Level	1982		1983		
	Number of Schools With Microcomputers	Percent of All Schools	Number of Schools With Microcomputers	Percent of All Schools	Percent Change 1982 to 1983
Elementary	5,142	**9.4**	14,160	**27.4**	175.4
Junior high	2,441	**20.3**	6,015	**46.2**	146.4
Senior high	6,403	**42.6**	10,318	**62.5**	61.1

Activity	Minutes-Per-User During an Average Week in Schools With Microcomputers				
		Percentage Distribution			
	Median Minutes	Total	1 to 15 Minutes	16 to 60 Minutes	More Than 60 Minutes
Elementary					
Programming, computer literacy	**19**	100	49	47	4
Drills, remedial work, math, language	**13**	100	60	40	(*)
Learning games, recreational games	**12**	100	73	27	(*)
Secondary					
Programming, computer literacy	**55**	100	18	38	44
Drills, remedial work, math, language	17	100	48	43	9
Learning games, recreational games	11	100	56	35	9
Word processing, data processing, lab, other	**30**	100	28	41	31

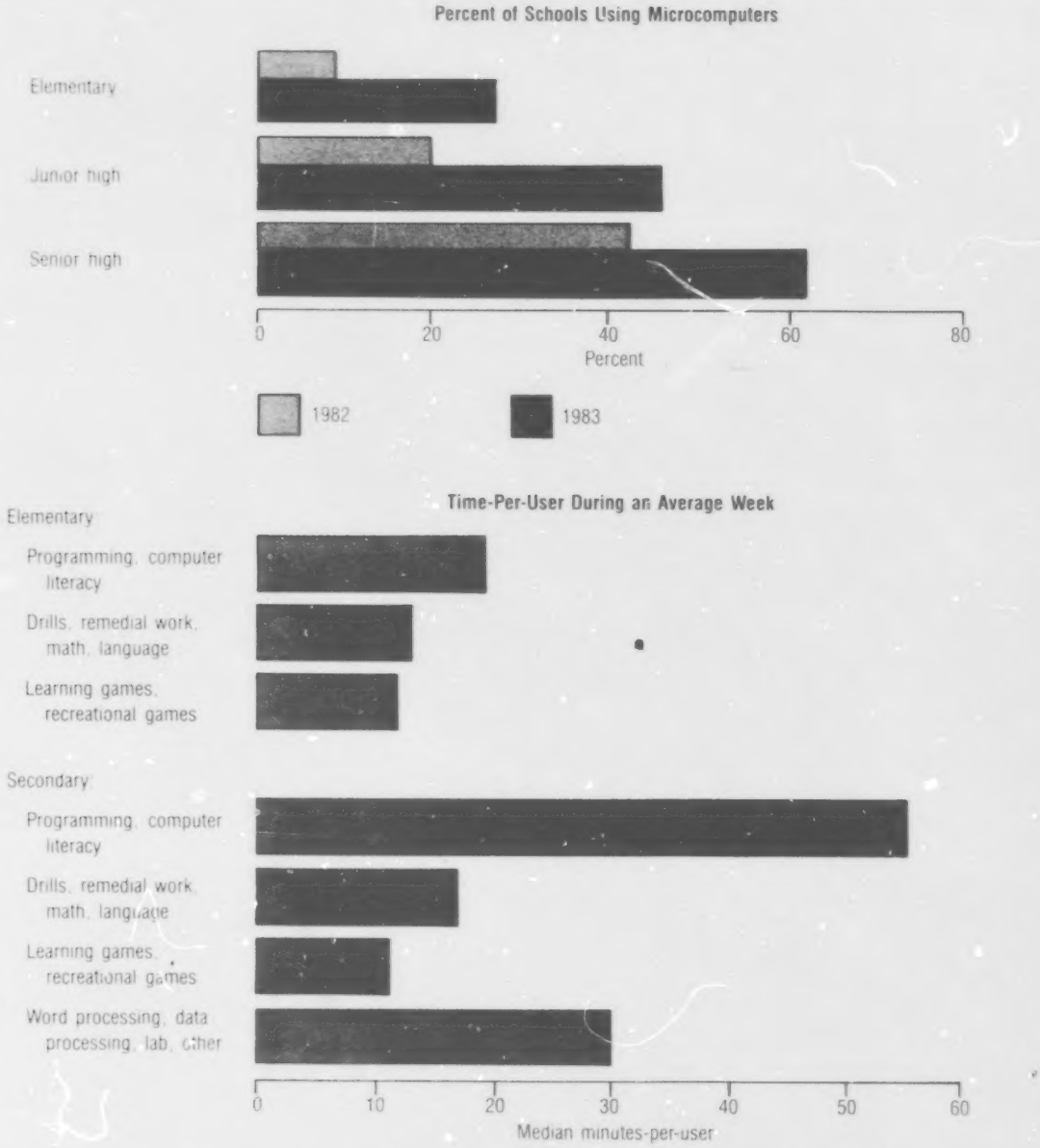
*Less than 0.5 percent

NOTE: The secondary grade level includes junior and senior high school. Details may not add to totals because of rounding.

SOURCE: The Johns Hopkins university, Center for Social Organization of Schools, "School Uses of Microcomputers," Issue Number 2, 1983; and Quality Education Data, Inc., "Microcomputer Data, Presentation to: NAVA Materials Council," January 1983.

Chart 5.10

Use of Microcomputers in Elementary and Secondary Schools



The percentage of schools using microcomputers more than doubled at the junior high level and increased by 61 percent at the senior high level between 1982 and 1983. Microcomputer users in secondary schools generally spent more time in programming and computer literacy instruction than in other computer activities.

Table 5.11

Number of Total Carnegie Units Required for High School Graduation in 1980, Approved or Proposed Changes, and Year Effective, by State: 1982–83

State	1980 Base	Changes from 1980 Base: Effective During 1982–83	Additional Units Approved: Carnegie Units	Additional Units Approved: Year Effective[1]	Additional Units Proposed: Carnegie Units	Additional Units Proposed: Year Effective[1]
Alabama[2]	20				+2 or +4	1987
Alaska	19				+4	1986
Arizona	16		+2	1986		
Arkansas	16				16	Unknown
California						
Colorado		18				
Connecticut						
Delaware	18					
District of Columbia	17½		+3	1984		
Florida						
Georgia	20					
Hawaii						
Idaho	18		+2	1987		
Illinois	16					
Indiana	16	+3				
Iowa						
Kansas	17					
Kentucky	18				+2	1987
Louisiana	20	+2				
Maine	16					
Maryland	20					
Massachusetts						
Michigan						
Minnesota	15					
Mississippi	16					
Missouri						
Montana	16					
Nebraska	16					
Nevada	19		+1	1986		
New Hampshire	16				+2	1986
New Jersey						
New Mexico	20				+2	1987
New York	16 18					
North Carolina	16	+2			+2	1987
North Dakota	17				+3	Unknown
Ohio	17		+1	1988		
Oklahoma	18		+2	1987		
Oregon	21					
Pennsylvania	13					
Rhode Island[2]	16				+1	Unknown
South Carolina	18				+2	Unknown
South Dakota	16				+2	1989
Tennessee	18				+2	Unknown
Texas	18		+2	1988		
Utah	15					
Vermont	16					
Virginia	18				+2	1988
Washington	15					
West Virginia	17		+3	1985		
Wisconsin					16½	
Wyoming	18					

[1] First graduating class subject to changed standard.

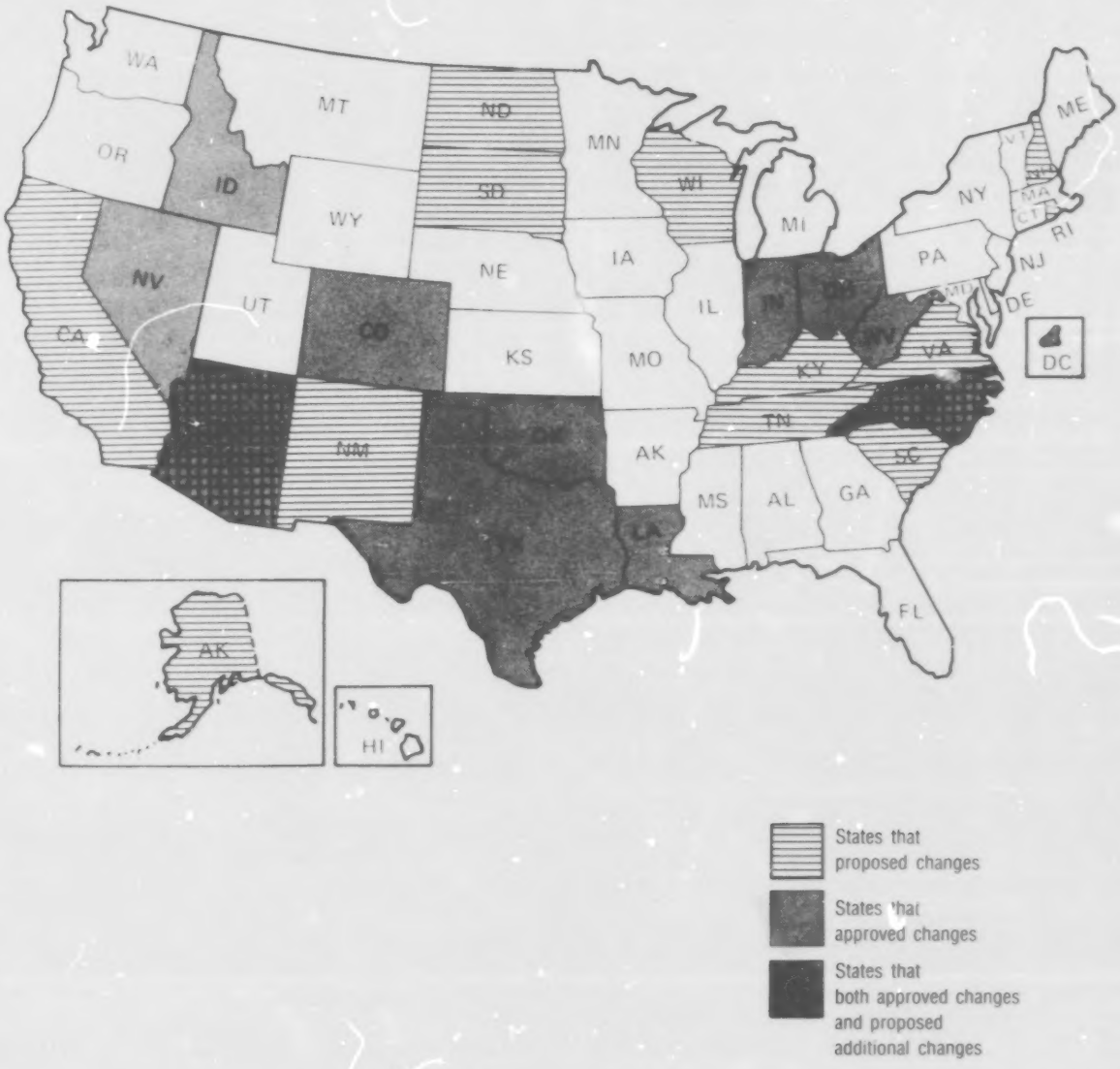
[2] Change in subject requirements but not in total net requirements.

NOTE: The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course.

SOURCE: National Association of Secondary School Principals, *State-mandated Graduation Requirements, 1980*; and U.S. Department of Education, National Center for Education Statistics, informal telephone interviews, February 1983.

Chart 5.11

States That Have Approved or Proposed Changes in Requirements for High School Graduation Between 1980 and 1983



Between 1980 and 1983, 22 States and the District of Columbia approved or proposed increases in the number of units required for high school graduation. These States were generally clustered in the Middle Atlantic, Ohio Valley, Southwest, and West.

Table 5.12

Number of Carnegie Units Required in Mathematics and Science for High School Graduation in 1980, Approved or Proposed Changes, by State: 1982–83

State	Mathematics				Science			
		Changes From 1980 Base in Carnegie Units				Changes From 1980 Base in Carnegie Units		
	1980 Base	Effective During 1982–83	Additional Units Approved	Additional Units Proposed	1980 Base	Effective During 1982–83	Additional Units Approved	Additional Units Proposed
Alabama*	1		+1		1			
Alaska	1				1			
Arizona	1			+1	1			+1
Arkansas								
California				+3				+2
Colorado								
Connecticut								
Delaware	1				1			
District of Columbia	1		+1		1		+1	
Florida								
Georgia	1				1			
Hawaii	2				2			
Idaho	1		+1		2			
Illinois								
Indiana	1	+1			1	+1		
Iowa								
Kansas	1				1			
Kentucky	2			+1	2			
Louisiana	2	+1			2			
Maine								
Maryland	2				2			
Massachusetts								
Michigan								
Minnesota								
Mississippi	1				1			
Missouri	1				1			
Montana	2				1			
Nebraska								
Nevada	1		+1			1		
New Hampshire	1			+1	1			+1
New Jersey	2				1			
New Mexico	2				1			
New York	1				1			
North Carolina	1				2			
North Dakota	1			+1	2			
Ohio	1		+1			1		
Oklahoma	1		+1			1	+1	
Oregon	1				1			
Pennsylvania	1				1			
Rhode Island*	1			+2	1			+1
South Carolina	2			+1	1			+1
South Dakota	1			+1	1			+1
Tennessee	1			+1	1			+1
Texas	2		+1			2		
Utah	1				1			
Vermont								
Virginia	1			+1	1			+1
Washington	3				2			
West Virginia	1		+1			1		
Wisconsin				+3				+3
Wyoming								

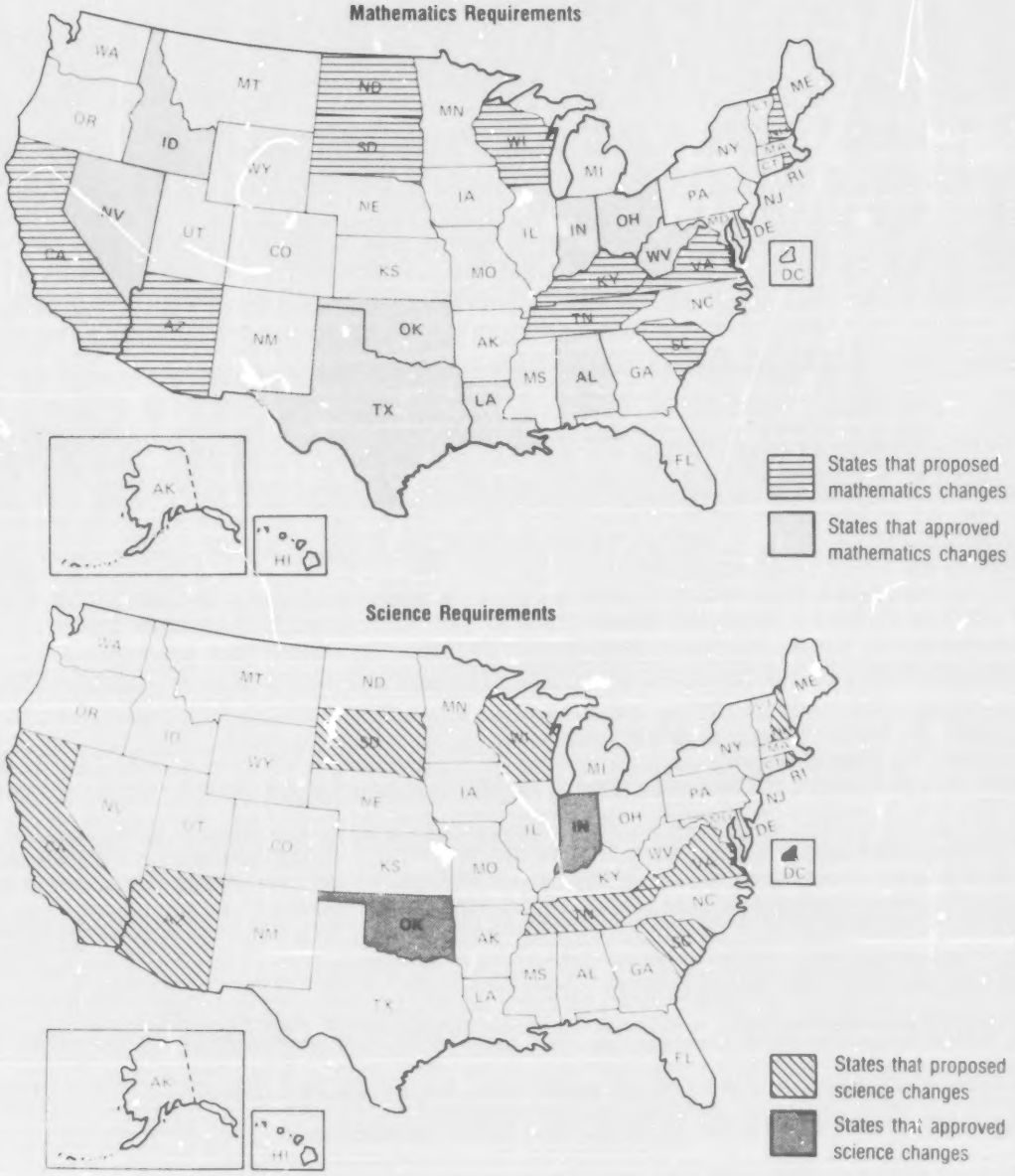
*Change in subject requirements but not in total net requirements.

NOTE: The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course.

SOURCE: National Association of Secondary School Principals, *State-mandated Graduation Requirements, 1980*, and U.S. Department of Education, National Center for Education Statistics, informal telephone interviews, February 1983.

Chart 5.12

States That Approved or Proposed Changes in Mathematics and Science Requirements for High School Graduation



Between 1980 and 1983, 20 States and the District of Columbia proposed or approved increases in the number of mathematics units required for high school graduation, and 12 approved or proposed changes in the number of science credits required.

Table 5.13

States Using Minimum-Competency Testing, by Government Level Setting Standards, Grade Levels Assessed, and Expected Uses of Standards: 1983

States Using Minimum Competency Testing	Government Level Setting Standards	Grade Levels Assessed	Expected Uses					First Graduating Class Assessed
			Grade Promotion	High School Graduation	Early Exit	Remediation	Other	
Alabama	State	3,6,9 +		X		X		1985
Arizona[1]	State/local	8,12	X	X			X	1976
Arkansas	State	3,4,6,8		X				
California	State/local	4-11,16 yr. old +	X	X	X	X	X	1979
Colorado	Local	9,12		**Local option**				
Connecticut	State/local	3,5,7,9				X	X	
Delaware	State	11		X				1981
Florida	State/local	3,5,8,11	X	X	X			1983
Georgia	State	4,8,10 +		X		X		1985
Hawaii[2]	State	9-12		X		X		1983
Idaho	State	9-12		**Local option**				1982
Illinois	Local	Local option					**Local option**	
Indiana	Local	3,6,8,10				X	X	
Kansas[3]	State	2-4,6,8,9,11,12					**Local option**	
Kentucky	State/local	3,5,7,8,10,11					X	
Louisiana	State	4-8,11	X	X			X	1992
Maine	State	8,11					X	
Maryland	State	3,7,9,11	X	X		X		1982
Massachusetts	Local	Local option					X	
Michigan	State	4,7,10					**Local option**	
Missouri	State	8					X	
Nebraska	Local	5					X	
Nevada	State	3,6,9,12		X		X		1982
New Hampshire	State	4,8,12					**Local option**	
New Jersey	State	9-12		X		X	X	1989
New Mexico	State	Local option, 10					X	1981
New York	State	3,6,8-12		X		X		1979
North Carolina	State	1-3,6,9,11		X				1980
Ohio	Local	Local option				X		
Oklahoma	None	3,6,9,12					X	
Oregon	Local	Local option		X				1978
Rhode Island	State	4,8,10					X	
South Carolina	State	1-3,6,8,11				X	X	1989
Tennessee	State/local	4-6,8,11,12		X		X	X	1983
Texas	Not reported	3,5,9 +				X		
Utah	Local	Local option		X				1980
Vermont	State	K-12		X			X	1981
Virginia	State/local	K-6,9-12		X				1981
Washington	Local	4,8					**Local option**	
Wisconsin	Local	1-4,5-8,9-10		**Local option**		X		

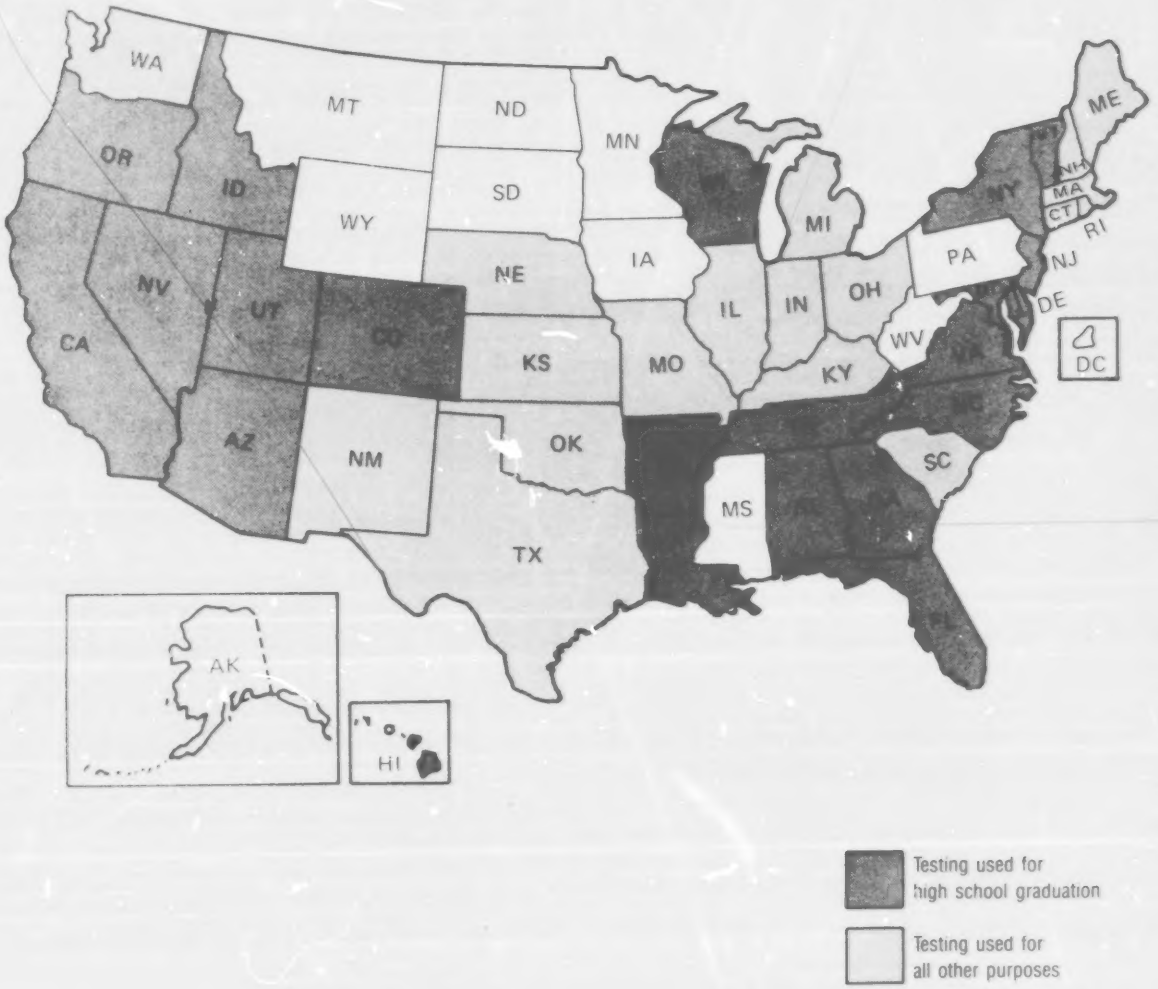
[1]Current legislation (1983) calls for the State to develop a minimum course of studies, criteria for high school graduation standards, and guidelines for grade-to-grade promotion. These initiatives are to be implemented by local education agencies.
[2]In Hawaii, students have 3 options: paper-pencil test; performance test; or course.
[3]The test expired in 1983; legislation is expected to renew for a 5-year period in 1984.

NOTE: Some States recorded dates for first high school graduating class to be assessed, but did not record expected use for high school graduation.

SOURCE: Education Commission of the States, Department of Research and Information, unpublished tabulations (November 1983).

Chart 5.13

Minimum-Competency Testing for High School Graduation



In 1983, 22 States used or expected to use minimum competency testing for high school graduation, and another 18 States used it for other purposes.

Table 5.14

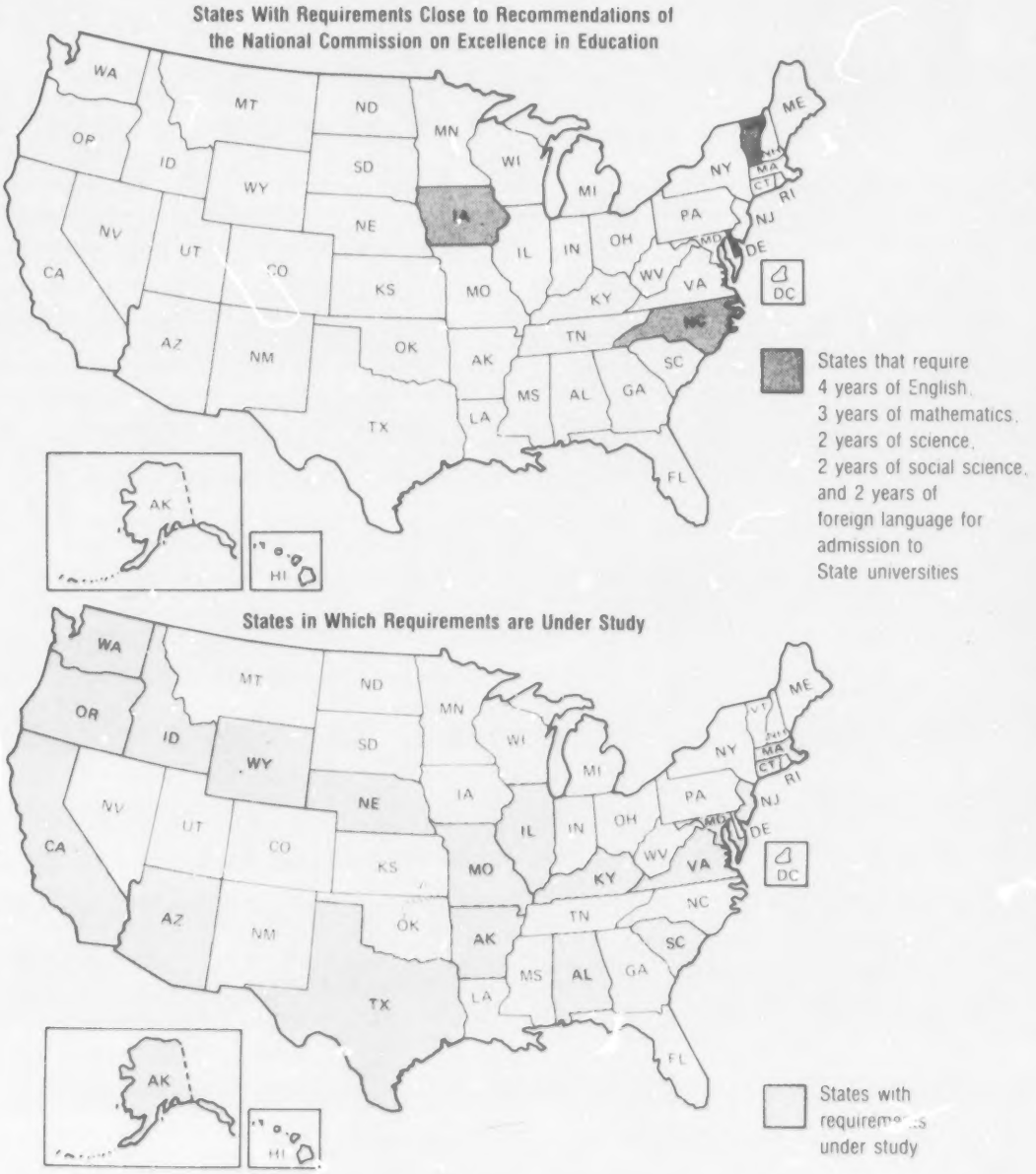
Number of Carnegie Units Required for State University Admission, by Subject Area and State: Fall 1982

State	Required Units, by Subject Area						Require-ments Under Study
	English	Mathe-matics	Science	Social Science	Foreign Language	Other	
Alabama	4	2	1	1	Optional		X
Alaska	3	2	2 ←or→ 2		2	5 academic	X
Arizona	4	2	1	2	1	7	X
Arkansas	3	1	1	1		1 additional math or science	X
California	4	2	1	1	2	1 advanced math, science, or language	X
Colorado	3	2	2	1	3	1 history, 3 electives	
Connecticut	4	3	1		2		X
Delaware	**4**	**3**	**2**	**3**	**2**		
District of Columbia	[An analysis of DC requirements was not included in the NASSP study]						
Florida						H.S. diploma	
Georgia	4	2	2	2		6	
Hawaii	3	1				4 academic	
Idaho						H.S. diploma	X
Illinois	3	2					X
Indiana	4	Any combination of 9 academic					
Iowa	**4**	**3**	**2**	**2**	**2**		
Kansas						H.S. diploma	
Kentucky						H.S. diploma	X
Louisiana						H.S. diploma	
Maine	**4**	**3**	**2**	**1**	**2**		
Maryland						H.S. diploma	X
Massachusetts						H.S. diploma	X
Michigan						H.S. diploma	
Minnesota	3	2		4		3 academic	
Mississippi	3	2		2		8 academic	
Missouri						H.S. diploma	X
Montana						H.S. diploma	
Nebraska						H.S. diploma	X
Nevada						H.S. diploma	
New Hampshire	4	2	1	2	2		
New Jersey	4	3			2	7 academic	X
New Mexico	3	2	2	2	4 academic plus fine arts		
New York	4	2	2	3			
North Carolina	**4**	**3**	**Any combination of 7 in science or social science**		**2**		
North Dakota						H.S. diploma	
Ohio						H.S. diploma	
Oklahoma						H.S. diploma	
Oregon						H.S. diploma	X
Pennsylvania	4	2	2				
Rhode Island	4	2	1	1	2	6	
South Carolina	4	2	2	2			X
South Dakota						12 academic	
Tennessee	2				2	H.S. diploma	
Texas	3	3	2	2	2	4	X
Utah	4	1					
Vermont	**4**	**3**	**2**	**3**	**2**		
Virginia	4	3	1	1	2		X
Washington	3	2	1	2	2	3	X
West Virginia	4	1					
Wisconsin	3	2	Any combination of 2 in science, social science, and foreign language			7	
Wyoming						H.S. diploma	X

NOTE: The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course.

SOURCE: National Association of Secondary School Principals, *College Admissions: New Requirements by the State Universities*, 1982.

State University Admissions Requirements



College admission requirements for State universities were under study in 20 States in 1982. Although no State met the recommendations for high school graduation set forth by the National Commission on Excellence in Education, State university admission requirements came closest in Delaware, Iowa, Maine, North Carolina, and Vermont.

The information presented in this report was obtained from many sources, including Federal and State agencies, private research organizations, and professional associations. The data were collected using several research methods including surveys of a universe (such as all colleges) or of a sample, compilations of administrative records, and statistical projections. A description of the information source and methods of data collection used for each data set is presented by sponsoring organization in the following subsections, preceded by a general discussion of data accuracy.

Accuracy of Data

The accuracy of any data is determined by the joint effects of sampling and nonsampling errors. Estimates based on a sample will differ somewhat from the figures that would have been obtained if a complete census had been taken using the same survey instruments, instructions, and procedures. The resulting differences are called sampling errors or sampling variability. In addition, all surveys, both universe and sample, are subject to design, reporting, and processing errors, and errors due to nonresponse. To the extent possible, these nonsampling errors are kept to a minimum by methods built into the survey procedures. In general, however, the effects of nonsampling errors are less gaugeable than those produced by sampling variability.

The standard error is the primary measure of sampling variability. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 90 out of 100 that the difference would be less than 1.65 times the standard error; about 95 out of 100 that the difference would be less than 1.96 times the standard error; and about 99 out of 100 that it would be less than 2.5 times as large. Thus, the standard error provides a specific range with a stated confidence within which a given estimate would lie if a complete census had been conducted.

To illustrate this further, consider the table A1 of standard errors and 90 percent confidence intervals for estimates from the High School and Beyond (HS&B) sambasis of information for this report. Particular care should ple. For an estimate of 30 percent of males participating in a program, the table shows that the standard error is 0.6 percent. This means that the chances are about 68 out of 100 that the 30 percent estimate is within 0.6 percent of the percent that could result from a complete census. Therefore, the 68 percent confidence interval is 29.4 to 30.6. In order to increase our confidence to 90 percent, we would have to use 1.65 times the standard error or 0.99 percent. Therefore the 90 percent confidence interval (rounded to tenths of a percent) would then be 29.0 to 31.0, which is the interval shown in the table.

A similar statement can be made concerning an estimated difference. The standard error of a difference between two sample estimates is approximately equal to the square root of the sum of the squared standard errors of the estimates. The standard error of a difference, a-b, is in fact: $s.e._{a-b} = \sqrt{s.e._a^2 + s.e._b^2 - 2s.e._{ab}}$.

It should be noted that the standard errors presented in subsequent sections and in the original documents are approximations. That is, to derive estimates of standard errors that would be applicable to a wide variety of items and could be prepared at a moderate cost, a number of approximations were required. As a result, the standard errors presented provide a general order of magnitude rather than the exact standard error for any specific item.

The preceding discussion on sampling variability was directed toward a situation concerning one or two estimates. A more difficult situation is encountered when determining the accuracy of statistical projections. In general the further away from the actual data being used for the projections, the greater the variability in the projection. That is, if annual data from 1970 to 1982 are being used to project enrollment in institutions of higher education, the further away from 1982 one gets, the more variability in the projection. One is less sure of the 1992 projection of enrollment in institutions of higher education than the 1983 projection. A detailed discussion of the projections methodology is contained in *Projections of Education Statistics to 1992-93*, forthcoming.

Sources of Information

A large number and variety of sources were used as the basis of information for this report. Particular care should

be taken in comparing data from the different sources. Differences in procedures, timing, phrasing of questions, interviewer training, and so forth, mean that the results from the several sources are not strictly comparable. The information in this report comes from the following different sources identified by the sponsoring agency or organization. Government sources are presented first, followed by private research and professional associations. It should be noted that more extensive documentation of survey procedures does not imply more problems with the data, only that more information is available on certain surveys than on others.

National Center for Education Statistics

Common Core of Data

The Common Core of Data (CCD) program is a coordinated effort administered by the National Center for Education Statistics (NCES) to acquire and maintain statistical data on States and local public school districts. The CCD program, which began in 1954, is a universe survey of State education agencies and education agencies of the the District of Columbia and outlying areas. Information is collected annually on the numbers of local public school districts, public elementary/secondary school systems, staff, students' high school graduates, estimates of revenue and nonrevenue receipts, school expenditures, and average salaries paid to classroom teachers and other professional/educational staff.

Since the CCD is a universe survey, the information presented in this report from the CCD is not subject to sampling error. However, nonsampling error may occur from two possible sources—nonreturn and misclassification. Nonreturn is minimal with all States submitting almost all nine survey instruments each year.

With data submitted by over 90,000 schools to approximately 16,000 local districts and compiled by the 50 State education agencies, opportunity does exist, however, for misclassification. NCES attempts to minimize these errors by working closely with the Council of Chief State School Officers and its Committee on Evaluation and Information Systems. The State education agencies have the task of gathering the information and performing the initial data audit, for which they are reimbursed by NCES. Then, to the extent possible, NCES reviews each State's reports for internal consistency and for comparability with information received in previous surveys, State publications, and related NCES studies. Letters, telegrams, and telephone calls are used, when necessary, to obtain data from respondents and to resolve questions.

As in any mailed questionnaire survey, interpretation of instructions and definitions may vary among respondents. Because public elementary/secondary education is a State and local responsiblilty, any statistical total for the Nation as a whole reflects a composite of the different reporti g practices in the States. The use of standard forms and definitions in collecting data tends to minimize these variations. Whenever State deviations from prescribed definitions and instructions are known, they are indicated in the footnotes. NCES encourages each State to obtain the data for its reports by conducting a fall survey of local school districts with adaptations of the Federal forms and accompanying instructions. Some States report from survey data collected for regular annual reports.

If questions arise concerning the Common Core of Data they can be directed to:

Warren Hughes
Institutional Surveys Branch
National Center for Education Statistics
400 Maryland Avenue SW.
Washington, D.C. 20202

Private School Survey

The NCES 1980-81 private elementary/secondary school survey was intended to assemble an inclusive listing and basic statistics of private elementary/secondary schools. Under contract to NCES, The National Catholic Educational Association (NCEA) surveyed the Catholic schools and Evaluation Policy Research Associates surveyed the non-Catholic private schools. A list of all private schools was developed and then a survey questionnaire was mailed to every school on the list. Schools

that did not respond to the first mailing were sent additional questionnaires, and in some cases phone calls were made to obtain their responses. The list construction for the Catholic schools was relatively simple because of the existing diocesan school system network. The list was developed for the non-Catholic private schools by searching the 1978-79 NCES private school universe listing, State and local government directories of schools, private school association directories, and by contacting local and regional private school authorities.

The survey objective, though unachievable, was to obtain information from every private elementary/secondary school that had a first or higher grade and enrolled students in the 1980-81 school year. Despite the efforts devoted to searching for schools, some schools were not included or were not contacted. Other schools failed to respond to one or more items on the questionnaire. These nonresponses were handled differently.

If a school was identified as operating in the 1980-81 school year (even by the return of the questionnaire with a refusal to cooperate), the school was considered open. Any items not completed by open schools were imputed by using data from earlier surveys. In the few cases where these data were not available, the value from a similar school was used for imputation. Imputed values resulting from this imputation procedure amounted to 1 percent of the total students, 3 percent of the total teachers, and 6 percent of the total high school graduates.

The other type of nonresponse—the failure to include some open schools—was examined through the Statistical Analysis Group in Education (SAGE). SAGE conducted an intensive search in 21 sites across the country to help evaluate the undercoverage of the private school survey. It was determined from those sites that 100 percent of the Catholic schools and 75 percent of the non-Catholic schools were covered by the NCES list. Although the results of this study are not definitive because of its small size, they do indicate that the number of schools reported may be underestimated by as much as 15 percent and the total number of students, by 5 percent. The study also concludes that the undercoverage was greatest for small, non-Catholic schools and for new schools. Questions concerning the Private School Survey can be directed to:

Jeffrey Williams
Elementary and Secondary Education Analysis Branch
National Center for Education Statistics
400 Maryland Avenue SW.
Washington, D.C. 20202

Higher Education General Information Survey

The Higher Education General Information Survey (HEGIS) is a coordinated effort administered by the National Center for Education Statistics (NCES). Its purpose is to acquire and maintain statistical data on the characteristics and operations of institutions of higher education. HEGIS, developed in 1966, is an annual universe survey of institutions listed in the latest *Education Directory, Colleges and Universities*.

The information presented in this report draws on HEGIS surveys which solicit information concerning institutional characteristics, faculty salaries, finances, enrollment, and degrees. These surveys are part of the overall HEGIS package and as such cover all institutions in the universe. The data presented, therefore, are not subject to sampling error but are subject to nonsampling error. Due to the differing information solicited by the various survey instruments, the sources of nonsampling errors differ. Each survey will therefore be discussed separately. A validation study, "HEGIS Post-Survey Validation Study," was conducted for two of the three HEGIS surveys, enrollment and degrees, in 1979. The information concerning the nonsampling error of these two surveys presented in this appendix draws considerably on this study.

If questions exist concerning the surveys used as data sources for this report, or if other questions arise concerning HEGIS, they can be directed to:

Curtis O. Baker
University and College Surveys and
Studies Branch
National Center for Education Statistics
400 Maryland Avenue SW.
Washington, D.C. 20202

Institutional Characteristics of Colleges and Universities

The Institutional Characteristics Survey provides the basis for the universe of institutions presented in the *Education Directory, Colleges and Universities*, and used in all other HEGIS data collection activities. The universe is comprised of institutions that offer at least a 1-year program of college-level studies leading toward a degree and that meet certain accreditation criteria. In the fall, institutions included in the Directory the previous year receive a computer printout of their information with a request to update. Institutions not previously included that have applied for Directory listing are sent a questionnaire form. All institutions reported are certified as eligible to be listed by the Division of Eligibility and Agency Evaluation within the U.S. Department of Education.

Opening Fall Enrollment in Institutions of Higher Education

Opening Fall Enrollment in Institutions of Higher Education has been part of the HEGIS series since its development. The enrollment survey, as with the HEGIS degree survey, does not appear to suffer significantly from problems of nonreturn. The major sources of nonsampling error for this survey come from classification problems, availability of needed data, interpretation of definitions, the survey due date, and operational errors. Of these, the classification of students appears to be the main source of error. Institutions have problems in correctly classifying first-time freshmen, other first-time students, and unclassified students for both full-time and part-time categories. These problems are more evident at 2-year institutions (both private and public) and the private 4-year institutions. In 1977-78 the classification problems lead to an estimated overcount of 11,000 full-time students and an undercount of 19,000 part-time students. Although the percentage of error for the grand total was quite small (less than 1 percent), the percentage of errors for detailed student levels might be as high as 5 percent or even higher at certain student levels.

Degrees and Other Formal Awards Conferred

The Degrees and Other Formal Awards Conferred survey has been part of the HEGIS series since its development. For the 1970-71 survey, however, the taxonomy was changed. The information from survey years 1970-71 through the present is therefore directly comparable, but care must be taken if information before this date is included in any comparison. The nonreturn rate does not appear to be a significant source of nonsampling error for this survey. The return rate over the years has been extremely high, with the rate for years 1977-78 and 1978-79 at 100 percent. Because of the high return rate, nonsampling error caused by imputation would also be minimal.

The major sources of nonsampling error for this survey are: differences in the HEGIS program taxonomies and taxonomies used by the school; classification of double majors and double degrees; operational problems; and timing of the survey. In the validation study conducted in 1979, it was found that the sources of nonsampling error noted above contributed to an error rate of 0.3 percent overreporting of bachelor's degrees and 1.3 percent overreporting of master's degrees. The differences, however, varied greatly among fields. Over 50 percent of the fields selected for the study had no errors identified. The major categories of fields that had large differences were: business and management, education, engineering, letters, and psychology. It is also shown that differences in proportion to the published figures were less than 1 percent for most of the selected fields that had some errors. Exceptions to this were: master's and Ph.D. programs in labor and industrial relations (20 percent and 8 percent); bachelor's and master's programs in art education (3 percent and 4 percent); bachelor's and Ph.D. programs in business, commerce, and distributive education (5 percent and 9 percent); master's and Ph.D. programs in letters (1 percent and 4 percent); master's programs in philosophy (8 percent); and Ph.D. programs in psychology (11 percent).

Financial Statistics of Institutions of Higher Education

The Financial Statistics of Institutions of Higher Education survey has been part of the HEGIS series since its development. A number of changes were made in the financial survey instruments in 1975. While these

changes were significant, only comparable information on trends is presented in this report. Other possible sources of nonsampling error in the financial statistics are nonresponse, imputation, and misclassification. The response rate has been over 90 percent for the years reported. Two general methods of imputation have been used: (1) if prior year's data were available for a nonresponding institution, these data were inflated using the Higher Education Price Index and adjusted according to changes in enrollments; or (2) if no previous year's data were available, current data were used from peer institutions selected for location (State or region), control, level, and enrollment size of institution. For the most recent year reported, the imputation method did not include the adjustment for changes in enrollments. It should be noted that the imputed current funds expenditures of the nonrespondents are less than 3 percent of the aggregate U.S. total.

To reduce reporting error, NCES uses national standards for reporting finance statistics. These standards are contained in *College and University Business Administration: Administrative Services (1974 Edition)*, published by the National Association of College and University Business Officers; *Audits of Colleges and Universities* (as amended August 31, 1974), by the American Institute of Certified Public Accountants; and *HEGIS Financial Reporting Guide (1980)*, by NCES. Wherever possible, definitions and formats in the survey form are consistent with those in these three accounting texts.

National Longitudinal Study of the High School Class of 1972

The National Longitudinal Study (NLS) of the High School Class of 1972 periodically queries a national sample of the 1972 high school seniors to chart their educational, vocational, and personal development. NLS was initiated in the spring of 1972 by NCES. Over 1,000 public and private schools and nearly 18,000 students participated. Four followup surveys have been conducted since the 1972 base-year survey, in fall 1973, fall 1974, fall 1976, and fall 1979.

The original sample design was a deeply stratified two-stage probability sample with schools as first-stage sampling units and students as second-stage units. The first-stage sampling frame was constructed from computerized school files maintained by the Office of Education and by the National Catholic Education Association. The schools were then stratified according to various criteria and randomly selected within strata. Except for schools in low income areas or with high black enrollments and schools with small enrollments, the schools were sampled with equal probability and without replacement. From each selected school, 18 students were randomly chosen to participate. The samples represent the Nation's 12th grade enrollment in 1972 in all public and private schools.

The main source of nonsampling error in a longitudinal study is usually the decrease in return rates over time. With NLS, 948 of the 1,200 primary sample schools participated in the base-year survey. Of the remainder, 21 had no seniors enrolled, and 231 either refused to participate or could not because they had received the request too late in the school year. In the summer of 1973, NCES made further attempts to secure the participation of the 231 schools that had not participated in the base-year survey, and to replace the 21 schools that had no seniors.

The "resurvey" activity, initiated prior to the first followup survey, involved securing school cooperation, choosing random samples of up to 18 former 1972 seniors per school, and then securing the last known addresses of those selected. This activity was successful in 205 of the 231 primary sample schools; thus, students from 1,153 of the 1,200 primary sample schools were included in the first followup survey. Also, an additional sample of 200 school districts was contacted during the base year to identify public schools not included in the original school sampling frame. Forty-five such schools were identified, and 23 of these were randomly selected as an "augmentation" sample to compensate for base-year undercoverage. Samples of former 1972 seniors students from 16 of these augmentation schools participated in the first and subsequent followup surveys.

Due to the complexities of the base year data collection, both unequivocal base-year data availability rates and subsequent followup response rates are difficult to compute. However, using the augmented base-year sample, the return rates were quite high.

Among the 16,683 individuals responding to the base-year questionnaire, the percentages also responding in the first, second, third, and fourth followup were approximately 94, 93, 89, and 83 percent, respectively. Of the 21,350 first followup questionnaire respondents, 95, 91, and 84 percent also responded to the second, third, and fourth followup, respectively. Sample retention among the 20,872 second followup respondents was 94 percent for the third followup and 87 percent for the fourth. Approximately 91 percent of the 20,092 third followup respondents also responded in the fourth followup.

Another area of possible nonsampling error in the NLS estimates is that of sample weights and nonresponse adjustments. Since students were selected with unequal probability, simple weighted tabulations could be misleading; thus, sample weights were computed for each student. The unadjusted sample weights were calculated as the inverse of sample inclusion probabilities, which are a function of the school selection probabilities and the student selection probabilities within school. Such calculations were difficult due to the several *post hoc* redefinitions of the sample; however, appropriate weighting was accomplished.

To provide better estimates of the attributes of this population, it was necessary to address the problem of compensating for instrument nonresponse. This was accomplished through weight adjustments. Because of the various sample redefinitions and augmentations, several sets of adjusted weights were computed. The general procedure used was a weighting-class approach, which distributes the weights of nonrespondents to respondents most like them. Weighting classes were defined by several survey classification variables: race, sex, high school curriculum, high school grades, and parents' education. Differential response rates for students in different weighting classes were reflected in this adjustment.

In addition to the nonresponse adjustment, the problem of nonresponse was addressed by identifying 88 critical questions. Special effort was then made to contact participants who failed to respond to these items in their questionnaires.

Estimates of the sampling errors for the NLS were calculated as a joint function of the estimated percentage and the sample size for the percentage base (denominator). The actual standard error estimate for a percentage from the complex stratified multistage NLS sample is inflated over the standard error estimate that would have been obtained had a simple random sample of students been selected. The estimated standard errors ranged from 1.19 to 6.00 for a sample size equal to 700 and estimated percentages of 1 (or 99) to 50; and standard errors ranged from 0.08 to 0.42 for a sample size equal to 20,000 and the same estimated percentages.

Questions concerning the NLS can be directed to:

Andrew Kolstad
Longitudinal Studies Branch
National Center for Education Statistics
400 Maryland Avenue SW.
Washington, D.C. 20202

High School and Beyond

High School and Beyond (HS&B) is a national longitudinal survey of 1980 high school seniors and sophomores conducted by NCES. A probability sample of 1,015 high schools was selected with a target number of 36 seniors and 36 sophomores in each of the schools. A total of 58,270 students participated in the base-year survey. Substitutions were made for noncooperating schools in those strata where it was possible, but not for students. Student and parent refusals and student absences resulted in an 84 percent completion rate for students. This refers

to the overall return rate of the survey and not the completion rate of each item within the survey.

Several small groups in the population were oversampled to allow for special study of certain types of schools or students. Students completed questionnaires and took a battery of cognitive tests. In addition, a sample of parents of sophomores and seniors (about 3,600 for each cohort) was surveyed.

The major sources of nonsampling error are in school nonresponse, student survey nonresponse, and student misinterpretation of the items. Nonresponse can come from the 9 percent school nonresponse, a 16 percent student nonresponse, and the nonresponse rates for given items. The nonresponse rates by item for those students returning a survey range from a low of 0.3 percent (questioning if the student expects to graduate) to a high of 21 percent (concerning family income). Examples of the sampling variability in the estimates from the HSB survey are given in Table A1.

The standard error (s.e.) of an individual percentage (p) can also be approximated by the formula s.e. (p) = $1.6\sqrt{p(100-p)/n}$ where n is the sample size and 1.6 is a factor used to adjust for the particular sample design used in High School and Beyond. In evaluating a difference between two percentages, the standard error of the difference may be conservatively approximated by taking the square root of the sum of the squared standard errors of the two percentages. For example, the estimated percentage of seniors in the Northeast enrolled in academic programs is 51 percent while the estimate for seniors in the South was 33 percent, a difference of 18 percentage points. Using the formula and the sample sizes from the table, the standard errors of the two percentages being compared are calculated to be:

$$1.6\sqrt{(51)(49)/5,587} = 1.1$$

$$1.6\sqrt{(33)(67)/9,142} = 0.8$$

The standard error of the difference is therefore

$$\sqrt{1.1^2 + 0.8^2} = \sqrt{1.21 + 0.64} = 1.4$$

The sampling error (95 chances in 100) of the difference is double the standard error, or approximately 3 percentage points, and the 95 percent confidence interval for the difference is 18 ± 3 or 15 to 21 percentage points.

As part of the first followup survey of High School and Beyond, transcripts were requested in fall 1982 for an 18,352-member subsample of the sophomore cohort. Of the 15,941 transcripts actually obtained, 1,969 were excluded because the students had dropped out of school before graduation, 799 were excluded because they were incomplete, and 1,057 transcripts were excluded because either the student graduated before 1982 or the transcript indicated neither a dropout status nor graduation. Thus, 12,116 transcripts were utilized for the overall curriculum analysis. All courses in each transcript were assigned a 6-digit code based on *A Classification of Secondary School Courses* (CSSC) which was developed by Evaluation Technologies, Inc. under contract with NCES. The number of credits earned in each course was expressed in Carnegie units. The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course. To receive credit for a course, the student must have received a passing grade (pass, D, or higher). Students who transferred from public to private or from private to public schools between their sophomore and senior years were eliminated from public/private analyses. Examples of the sampling variability in the estimates from the transcript study are given in Table A2.

For the vocational curriculum analysis, 12,292 transcripts were used. The Office of Vocational and Adult Education in the Department of Education identified the courses as vocational and assigned each course into one of nine subject matter areas: agriculture, business, marketing, technical occupations, health, trades and industry, vocational home economics, industrial arts, or consumer home economics. Each course was further classified as being exploratory or occupational. An exploratory course typically provides an overview and/or serves as an introduction while an occupational course provides specific job-related training.

Of the 52 two-digit instructional areas listed in the CSSC, 21 contained courses that were used in the vocational analysis. These 21 areas can be categorized into three groupings: occupational; exploratory; and both occupational and exploratory. Examples of course titles, and the subject matter area to which they apply are shown below according to this classification.

Course Title	Subject Matter Area
Occupational	
Advanced Commercial Photography	Trade and Industrial
Cosmetology	Trade and Industrial
FORTRAN	Technical
Exploratory	
Adult Roles and Functions	Consumer Home Economics
Mechanical Drawing	Industrial Arts
Printmaking	Industrial Arts
Both Occupational and Exploratory	
(First course occupational; second course exploratory)	
Cooperative Education; Career Exploration	Trade and Industrial
Distributive Education; Junior Achievement	Marketing
Typewriting II; Typewriting I	Business

Differences of opinions may exist among vocational education curriculum experts whether a given vocational course should be classified as exploratory or occupational. Consequently, additional tabulations based on alternative ways of categorizing introductory vocational courses were produced and are available upon request.

To be classified as a vocational program student, a student had to have selected one of the seven vocational areas (agriculture, business or office, distributive education, health, home economics, technical, or trade and industrial occupations) in response to the question, "Which of the following best describes your present high school program?" He/she also had to have earned at least one credit in vocational education.

Group differences cited in the text are statistically significant at the 0.05 level on the basis of two-tailed t tests. Standard errors for all estimates were calculated using the Balanced Repeated Replicates (BRR) method. The

ranges of standard errors for each vocational education area are: Vocational (total)—.07 to .15; Occupational (total)—.05 to .14; Exploratory (total)—.03 to .08. For subcategories within these main categories, the standard errors for earned credit ranged from .01 to .05 for all cases except: trades and industry, occupational—.09; trades and industry, exploratory—.10.

If questions arise concerning the High School and Beyond study, or to obtain a copy of the vocational tabulations cited earlier contact:

Jeffrey Owings
Longitudinal Studies Branch
National Center for Education Statistics
400 Maryland Avenue SW.
Washington, D.C. 20202

Table A1

Standard Errors of the Estimated Percent Participating in Selected Programs of the High School and Beyond Study

Subgroup	Estimated Percent	Standard Error of Estimated Percent	90 Percent Confidence Interval
All students or whites	10 (or 90)	0.3	9.5-10.5(89.5-90.5)
	30 (or 70)	.4	29.3-30.7(69.3-70.7)
	50	.5	49.2-50.8
Males or females	10 (or 90)	.4	9.4-10.6(89.4-90.6)
	30 (or 70)	.6	29.0-31.0(69.0-71.0)
	50	.6	49.0-50.0
Blacks	10 (or 90)	.7	8.8-11.2(88.8-91.2)
	30 (or 70)	1.1	28.2-31.8(68.2-71.8)
	50	1.2	48.1-51.9
Hispanics	10 (or 90)	.8	8.7-11.3(88.7-91.3)
	30 (or 70)	1.2	28.0-32.0(68.0-72.0)
	50	1.3	47.8-52.2

Table A2
Standard Errors of the Estimated Percent of 1982 High School Graduates Who Met the Curricular Recommendations of the National Commission on Excellence in Education

Recommendation	All Graduates	Educational Aspirations			
		High School Graduation	Some Postsecondary but Less Than 4 Years of College	4 or More Years of College	Aspirations Not Indicated
All recommendations	.20	.19	.10	.42	.32
All except foreign language	.22	.22	.29	.44	.51
All except computer science	.40	.39	.41	.75	.77
All except foreign language and computer science	.37	1.03	.58	.76	1.12
English (4 years)	.89	1.97	1.21	1.17	3.00
Mathematics (3 years)	.71	1.07	.96	1.09	2.08
Science (3 years)	.66	1.22	.83	1.13	1.92
Social Studies (3 years)	1.16	2.14	1.49	1.10	2.27
Foreign language (2 Years)	.81	.90	.89	1.41	1.61
Computer science (0.5 years)	.61	.96	.84	1.03	1.62

National Institute of Education

National Assessment of Educational Progress

The National Assessment of Educational Progress (NAEP) is a project funded by the National Institute of Education. The overall goal of the project is to determine the Nation's progress in education. To accomplish this goal, a cross-sectional study was designed and initially implemented in 1969. Each year NAEP has gathered information about levels of education achievement across the country. NAEP has surveyed the education attainments of 9-, 13-, and 17-year-olds and young adults (ages 25-35) in ten learning areas. Different learning areas have been assessed every year, and all areas have been periodically reassessed in order to measure possible changes in education achievement.

The mathematics assessments and the 1977 science assessment presented in this publication were carried out by the Education Commission of the States. Multistage probability samples were used. The primary sampling units were stratified by region, and within region, by State, size of community, and for the two smaller sizes of community strata, by socioeconomic level. Assessment exercises were administered either to individuals or small groups of students by specially trained personnel.

Information from NAEP is subject to both nonsampling and sampling error. Two possible sources of nonsampling error are nonparticipation and instrumentation. Nonparticipation is held to a minimum through oversampling, although this does not assess the bias of nonparticipants. Instrumentation nonsampling error concerns whether the NAEP assessment instruments measure what is being taught and in turn what is being learned by the students.

If questions exist concerning NAEP, contact:

Professor Woodford
National Assessment of Educational Progress
P.O. Box 2923
Princeton, New Jersey 08541

School Finance Project

The School Finance Project was organized in the U.S. Department of Education to report on various school finance issues. Fiscal and demographic features of States were examined in an attempt to identify patterns that influence school spending and that may account for some of the differences in school expenditures among States. Data on school revenues and expenditures and on school attendance were obtained from published estimates of the National Education Association. They differ somewhat from data reported by NCES.

State features examined by the School Finance Project were: per capita income,which is an indicator of the ability of States to support public schools; school tax effort which provides an estimate of how burdened State residents are by public school spending; the share of State/local expenditures going to public schools which gives the relative importance that school spending is in each State; and the proportion that public school students comprise of each State's total population which measures differences in the demand for school services among States. Data for all States were converted to indices where the U.S average was equal to 100. These indices facilitate comparisons by revealing the relative position of States on each measure and changes that occurred during the decade.

If questions arise concerning the School Finance Project, they can be directed to:

Esther Tron
Statistical Information Branch
National Center for Education Statistics
400 Maryland Avenue SW.
Washington, D.C. 20202

Office for Civil Rights

Civil Rights Survey of Elementary and Secondary Schools

The Fall 1980 Civil Rights Survey of Elementary and Secondary Schools, a study contracted through DBS Corporation, was conducted to obtain data on the characteristics of students enrolled in public schools throughout the Nation. The information is required by the U.S. Education Department's Office for Civil Rights (OCR) to fulfill its responsibilities under Title VI of the Civil

Rights Act of 1964, Title IX of the Education Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973. The survey provides information on minority, handicapped, and limited-English proficient enrollments, disciplinary actions, the composition of the graduating class, and participation in programs for exceptional children.

Some 5,000 school districts and 51,000 individual schools participated. School districts were not randomly selected; rather, districts warranting continued monitoring based on the 1978 survey were chosen as well as a random sample of remaining districts with at least 300 students.

Further information is available from:

Nancy Russell
Surveys Branch
Office for Civil Rights
330 Maryland Avenue SW
Washington, D.C. 20202

Bureau of the Census

Current Population Survey

Estimates on school enrollment as well as social and economic characteristics of students are based on data collected in the Census Bureau's monthly household survey. The monthly Current Population Survey (CPS) sample consists of 614 areas, comprising 1,113 counties, independent cities, and minor civil divisions throughout the 50 States and the District of Columbia. The sample was initially selected from the 1970 census files and is periodically updated to reflect new housing construction when possible.

The monthly CPS deals primarily with labor force data for the civilian noninstitutional population (excludes military personnel and their families living on post and inmates of institutions). In addition, supplemental questions are asked about the education of all eligible members of the household. These questions in the October 1982 survey obtained information on highest grade completed, level of current enrollment, attendance status, number and type of courses, degree or certificate objective, and organizational type offering instruction.

The estimation procedure employed for the monthly CPS data involves the inflation of weighted sample results to independent estimates of characteristics of the civilian noninstitutional population in the U.S. by age, sex, and race. These independent estimates are based on statistics from decennial censuses; statistics on births, deaths, immigration, and emigration; and statistics on the strength of the Armed Forces. Generalized standard error tables are provided in the *Current Population Reports*.

Further information is available from:

Susan Hill
Systems Design and Analysis Branch
National Center for Education Statistics
400 Maryland Avenue SW.
Washington, D.C. 20202

Quarterly Summary of Federal, State and Local Tax Revenue

State tax revenue data shown in this report are collected as part of the Quarterly Summary of Federal, State and Local Tax Revenue through mailed surveys of appropriate State offices. In some instances, data were compiled by the Bureau of the Census from official State records.

The concept of "taxes" is comprised of all compulsory contributions exacted by a government for public purposes, except employer and employee assessments for retirement and social insurance purposes, which are classed as insurance trust revenue. Outside the scope of this report are collections for the unemployment compensation "taxes" imposed by each of the State governments and the District of Columbia. Included, however, are all receipts from licenses and compulsory fees, including those imposed for regulatory purposes, as well as those designed to provide revenue.

Tax revenue is defined to include related penalty and interest receipts, but to exclude protested amounts and refunds. The deduction from gross collections of amounts refunded is particularly significant with respect to motor fuel sales taxes ("gasoline" taxes).

Data are subject to possible inaccuracies in classification, response, and processing. Care is taken to keep such errors to a minimum in examining, editing, and tabulating the data.

More detailed figures on State tax revenue, with definitions of particular types of taxes, appear in the annual reports, *State Government Tax Collections* and *State Government Finances*.

Further information is available from:

Donna Hirsch
Governments Division
Bureau of the Census
Washington, D.C. 20233

Survey of Local Government Finances

The Survey of Local Government Finances collects detailed data on the finances of local public school systems. The report form was developed jointly by NCES and the Governments Division of the Bureau of the Census. The Census Bureau was responsible for the data collection. The data were obtained via the cooperation of State education agencies (SEA's). In most cases, SEA's transmitted the data to the Census Bureau by means of computer tapes, tabulations, or report forms. In a few instances, Census Bureau staff went to the SEA to collect the data from files. States had the option of providing data for all their school districts or a sample selected by the Census Bureau. Most opted to provide data for all their districts. Data editing was done by Census Bureau staff.

For further information contact:

Lawrence MacDonald
Governments Division
Bureau of the Census
Washington, D.C. 20233

Bureau of Labor Statistics

Economic Growth Model System

The Bureau of Labor Statistics (BLS) prepares projections on a 2-year cycle, using the Economic Growth Model System. This system is composed of a group of separate but related processes. Projections are produced in the following areas: (1) labor force; (2) aggregate economic performance; (3) industry final demand and total industry production; (4) industry employment levels; and (5) occupational employment by industry.

One of the main resources in making occupational employment projections is the industry-occupation matrix. This matrix is produced from data collected by State employment agencies and brought together by the Bureau of Labor Statistics to produce national estimates. The data are collected from employers on a 3-year cycle: manufacturing one year; nonmanufacturing the next year; and the balance of nonmanufacturing (trade, transportation, communications, and utilities) the final year. The data from the 3-year cycle are put on the same employment basis to form annual average estimates for occupational employment in each of the 3-digit Standard Industrial Classification (SIC) industries. The matrix contains over 1,500 detailed occupations, although most industries do not have employment in many of these occupations.

The major occupational cells of the industry-occupation matrix for the base year are reviewed and adjustments are made to the cells in the projected matrix to account for changes expected to take place in the industries because of technological change, product mix shifts, and other factors. The changes introduced into the input-output model for expected technological change may also alter the staffing patterns in industries using the new technology. For example, one would expect greater general employment of computer specialists as computer technology spreads across industries. The projected industry employment patterns and the new cell employment is aggregated across all industries to yield total occupational employment for the projected year.

For answer to questions concerning these or other BLS projections, contact:

Michael Pilot
Divison of Occupational Outlook
Bureau of Labor Statistics
Washington, D.C. 20212

National Science Foundation

Science Assessment and Research Project

The purpose of the Science Assessment and Research Project (SARP), based at the University of Minnesota and funded by the National Science Foundation, is to assess the status of science literacy among 9-, 13-, and 17-year-olds in the United States. SARP addresses two general issues: 1) what is the current status of science performance and attitudes in the United States, and 2) how does the current status differ from that of previous assessments. Students answered a series of affective and cognitive questions selected from previous national assessments and those reflecting an understanding of how science affects society.

Following the procedure previously established by National Assessment of Educational Progress (NAEP), the assessment was administered to a nationally representative sample of 18,000 students in approximately 700 schools. NAEP describes this sampling plan as a deeply stratified, multistage probability sample design. Selection of content for specific test items was guided by objectives developed by NAEP in 1976-77, the focus of the SARP assessment, and the advice of a research advisory committee that included representatives from several major professional organizations.

Test items were drawn from four major classification areas: 1) Science Content, the body of scientific knowledge; 2) Inquiry, the process by which the knowledge base is derived; 3) Science, Technology, and Society, the implications of the knowledge base for mankind; and 4) Attitudes, the orientation and feeling students have toward science.

For further information, contact:

Wayne W. Welch
Science Assessment and Research Project
Minnesota Research and Evaluation Center
210 Burton Hall
Minneapolis, Minnesota 55455

National Education Association

Estimates of School Statistics

The National Education Association (NEA) reports revenues and expenditure data in its annual publication, *Estimates of School Statistics*. Each year, NEA prepares regression-based estimates of financial and other education statistics that are submitted to the States for verification. Generally, about 30 States adjust these estimates to reflect their own data files. Published preliminary data,which are later revised by the States, are published as final by NEA the following year. The most recent publication contains all changes reported to the NEA.

The School Finance Project of the U.S. Department of Education used revised estimates of financial data prepared by NEA because it was the most current source. Expenditure data reported to NCES must be certified for use in Department of Education formula grant programs, such as Chapter 1 of the Education Consolidation and Improvement Act. As a result, NCES data are not available as soon as NEA estimates. In order to be consistent, therefore, NEA's data were used throughout the period studied by the School Finance Project.

If questions exist concerning the NEA estimates, they can be directed to:

National Education Association—Research
1201 16th Street NW
Washington, D.C. 20036

The Johns Hopkins University

National Survey of School Uses of Microcomputers

The National Survey of School Uses of Microcomputers is based on a probability sample of 2,209 public and private elementary and secondary schools in the United States. The sample was constructed from a sampling frame of all public schools and over 90 percent of the private schools in the United States.

The survey employed a stratified sampling design. Certain categories of schools were oversampled in order to obtain the greatest detailed information about schools likely to have had the most experience with microcom-

puters, and to obtain a sufficient number of private schools to enable analysis of microcomputer use in that sector. All reported results were weighted to reflect a representative sample of all schools in the United States.

Information about whether a sampled school had a microcomputer and if so how many, was obtained for 96 percent of the national sample. The survey was conducted between December 1982 and February 1983 by mailing a questionnaire to the principal and by telephoning a contact in the school.

Additional information about schools using microcomputers was provided by the "primary computer-using" teacher. The results reported are based on data representing 68 percent of a nationally representative sample of 1,600 schools that had obtained at least one microcomputer for instructional purposes prior to January 1983.

For more information contact:

Henry Jay Becker
Project Director
Center for Social Organization of Schools
The Johns Hopkins University
Baltimore, Maryland 21218

National Center for Research in Vocational Education, Ohio State University

NLS Youth Cohort

The secondary and postsecondary vocational education section in this report is based on analyses of data from the National Longitudinal Survey of Labor Market Experience, the Youth Cohort (NLS Youth). The data collection for this survey was initiated in 1979 by the Center for Human Resource Research, with support from the U.S. Departments of Labor and Defense.

The NLS Youth data are based on a national probability sample of 12,686 respondents who were between the ages of 14 and 21 when the sample was originally selected in 1978. Base year interviews with sample members were conducted early in 1979, at which time extensive background information about family, schooling, and work history, as well as information on current educational and labor market activities, were obtained. Followup interviews took place in 1980, 1981, and 1982.

In addition, high school transcripts were obtained for a subsample of the NLS Youth. This subsample consisted of civilian respondents who reported completing high school and for whom complete course information for grades 9 through 12 was available. A case was eliminated from the subsample if a respondent was not interviewed in 1980 or was serving in the military. Thus, the subsample contained 3,056 respondents between the ages of 17 and 23, of whom 48 percent were male and 52 percent female, with 87 percent whites, 9 percent black, and 4 percent Hispanic. The NLS Youth subsample has a slightly higher proportion of whites and males than the population in general. However, based on sociodemographic characteristics such as geographic region, urban/rural residence, and family socioeconomic status, the NLS Youth subsample provides data generally representative of the national population.

Information gathered from the high school transcript included the number of days absent in grades 9 through 12, class rank, various aptitude test scores, and course information such as the grade level at which a course was taken, the course type, and the amount of credit and letter grade received for the course.

The transcript data were used to identify and define patterns of secondarey vocational participation and then to classify respondents by their different patterns of participation. This classification scheme not only reflected the variability within vocational education experiences, but also permitted a more refined examination of the effects of secondary vocational training on postsecondary educational and labor market experiences of youth.

If questions arise concerning the NLS Youth Cohort analyses, they can be directed to:

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Definitions of Selected Terms

The following terms are defined as they generally apply in the text. Readers interested in more technical, detailed definitions should refer to the appropriate National Center for Education Statistics (NCES) Handbook.

Academic program: A program of studies designed primarily to prepare students for college.

Achievement test: An examination that measures the extent to which a person has acquired certain information or mastered certain skills, usually as a result of specific instruction.

Adult education: Courses and other organized educational activities taken by persons 17 years of age and over, excluding courses taken by full-time students in programs leading toward a high school diploma or an academic degree and occupational programs of 6 months or more duration. It includes all courses taken for credit by part-time students. Providers of instruction include not only public and private educational institutions, but also business and industry, governmental agencies, private community organizations, and tutors. (The definition applies specifically to data from the NCES-sponsored Current Population Survey.)

Advanced/honors courses: Special accelerated courses for students who have achieved a high standard of performance in a special subject area or who had generally high scholarship.

Assessment area: A particular aspect of behavior or ability which is evaluated or appraised by means of a test or other measurement instrument.

Area vocational center: A shared-time facility that provides instruction only in vocational education to students from throughout a school system or region. Students attending an area vocational center receive the academic portion of their education program in regular secondary schools or other institutions.

Average annual percent change: As used in the State tax revenues entry, average annual percent change is calculated using the compound interest formula: $F = P(1 + i)^n$, where F = the final compound amount, P = the original principal, i = the interest rate per conversionperiod, and n = the number of conversion periods. In all other entries, it is a simple average.

Bachelor's degree: A degree granted for the successful completion of a baccalaureate program of studies, usually requiring at least 4 years (or equivalent) of full-time college-level study.

Bilingual/bicultural: A special language services program (i.e., English-as-a-Second-Language or High Intensity Language Training) or any non-language class taught in a language other than English.

Central cities: The largest city with 50,000 or more inhabitants in a Standard Metropolitan Statistical Area (SMSA). A smaller city within an SMSA may also qualify if it has at least 250,000 inhabitants or has a population of one-third or more of that of the largest city and a minimum population of 25,000. An exception occurs where two cities have contiguous boundaries and constitute, for economic and social purposes, a single community of at least 50,000, the smaller of which must have a population of at least 15,000.

Carnegie unit: A standard of measurement that represents one credit for the completion of a 1-year course.

Civilian labor force: All persons in the labor force, who are not in the Armed Forces, whether they are classified as employed or unemployed.

Classroom teacher: A staff member assigned the professional activities of instructing students, in classroom situations, for which daily student attendance figures for the school system are kept.

Cohort: A group of individuals that have a statistical factor in common, e.g., year of birth.

Collective bargaining agent: An organization such as the National Education Association, American Federation of Teachers, etc., recognized by the institution, either voluntarily or through agent elections, as representing the interests of faculty in collective bargaining.

College: A postsecondary school which offers general or liberal arts education, usually leading to a first degree. Junior colleges and community colleges are included under this terminology.

College enrollment: Enrollment in a course that leads to a bachelor's, master's, professional, or doctorate degree, excluding vocational certification.

Competency-based certification: The general process by which the State (or agency or organization authorized by the State) provides a credential to an individual. Processes may require individuals to demonstrate a mastery of minimum essential generic and specialization competencies and other related criteria adopted by the board through a comprehensive written examination and through other procedures that may be prescribed by the board of education examiners.

Computer-assisted instruction: Programmed instruction utilizing an electronic computer as the principal medium of instruction.

Comprehensive secondary school: A general secondary school offering programs in both vocational and general academic subjects, but in which the majority of the students are not enrolled in programs of vocational education.

Constant dollars: Dollar amounts that have been adjusted by means of price and cost indexes to eliminate inflationary factors and allow direct comparison across years.

Core current expenditures: Measure of total expenditures excluding transportation and food service costs, used in interstate comparisons.

Current dollars: Dollar amounts that have not been adjusted to compensate for inflation.

Current funds expenditures (higher education): Money spent to meet current operating costs including salaries, wages, utilities, student services, public service, research libraries, scholarships and fellowships, auxiliary enterprises, hospitals, and independent operations. Excludes loans, and capital expenditures, and investments.

Current funds revenues: Money received during the current fiscal year from revenue which can be used to pay obligations currently due, and surpluses reappropriated for the current fiscal year.

Discipline division (new classification): The recent reclassification of disciplines designed to reflect the emergence of new instructional programs. Data on earned degrees conferred in this report are presented according to the new classification, while previously published NCES reports may use the earlier classification.

Doctor's degree: An earned degree carrying the title of Doctor. The Doctor of Philosophy degree (Ph.D) is the highest academic degree, and requires mastery within a field of knowledge and demonstrated ability to perform scholarly research. Other doctorates are awarded for fulfilling specialized requirements in professional fields, such as education (Ed.D.), musical arts (D.M.A.), business administration (D.B.A), and engineering (D.Eng. or D.E.S.). Many doctor's degrees in both academic and professional fields require an earned master's degree as a prerequisite. First-professional degrees, such as M.D. and D.D.S. are counted separately and are not included under this heading.

Educational attainment (years of school completed): The highest grade of regular school attended and completed.

Education major: A student whose program of studies gives primary emphasis to subject matter in the area of education and who, according to his/her institutional requirements, concentrates a minimum number of courses or semester hours of college credit in the specialty of education.

Elementary school: A school classified as elementary by State and local practice and composed of any span of grades not above grade 8. A preschool or kindergarten school is included under this heading only if it is an

integral part of an elementary school or a regularly established school system.

Elementary/secondary school: As reported in this publication, includes only regular schools, i.e., schools that are part of State and local school systems, and also most non-profitmaking private elementary/secondary schools, both religiously affiliated and nonsectarian. Schools not reported include subcollegiate departments of institutions of higher education, residential schools for exceptional children, Federal schools for Indians, and Federal schools on military posts and other Federal installations.

Employed: All civilians who did any work at all as paid employees, or who worked in their own business or profession or on their own farm, or who worked 15 hours or more as unpaid workers on a farm or in a business operated by a member of the family. The employed include as well all those who were not working but who had jobs or businesses from which they were temporarily absent, whether or not they were paid for time off by their employers, and whether or not they were seeking other jobs.

Endowment income: Revenues from permanent accounts used for current operations.

Enrollment: The total number of entering students in a given school unit.

Expenditures: Charges incurred, whether paid or unpaid which are presumed to benefit the current fiscal year. For elementary/secondary schools, these include all charges for current outlays for education, plus capital outlays and interest on school debt. For institutions of higher education, these include current outlays plus capital outlays. For government, these include charges net of recoveries and other correcting transaction—other than for retirement of debt, investment in securities, extension of credit, or as agency transactions. Government expenditures include only external transactions, such as the provision of perquisites or other payments in kind. Aggregates for groups of governments exclude intergovernmental transactions among the governments.

Expenditures per student: Charges incurred for a particular period of time divided by a student unit of measure, e.g., average daily attendance or average daily membership.

Exploratory vocational education courses: Vocational courses that provide an introduction to or overview of a particular subject area. For example, according to the classification presented in this report, Typing I is considered an exploratory course, and Typing II is classified as an occupational course.

Expulsion: The action, taken by school authorities, compelling a student to withdraw from school for reasons such as extreme misbehavior, incorrigibility, or unsatisfactory achievement or progress in school work.

First-professional degree: A degree that signifies both (a) completion of the academic requirements for beginning practice in a given profession and (b) a level of professional skill beyond that normally required for a bachelor's degree. This degree usually is based on a program requiring at least 2 academic years of work prior to entrance and a total of at least 6 academic years of work to complete the degree program, including both prior-required college work and the professional program itself. First-professional degrees are awarded in fields such as dentistry (D.D.S. or D.M.D.), medicine (M.D.), optometry (O.D.), osteopathic medicine (D.O.), podiatric medicine (D.P.M.), veterinary medicine (D.V.M.), law (J.D.), and theological professions (M.Div. or M.H.L.).

First-time college students: Students not previously enrolled in any institution of higher education.

Full-time-equivalent enrollment: Enrollment of full-time and the equivalent part-time students as reported by the institution or as computed by adding one-third of part-time to full-time enrollment.

Full-time personnel: Employees whose positions require them to be on the job on school days throughout the school year, at least the number of hours the schools are in session; or, for higher education, those members of the staff of an educational institution who are employed on a full-time basis and whose major regular assignment is instruction.

Full-time students (higher education): Students enrolled in courses with total credit equal to at least 75 percent of the normal full-time course load.

General educational development (GED) program: Academic instruction to prepare persons to take the high school equivalency examination.

General program: A program of studies designed to prepare students for the common activities of persons as citizens, family members, and workers. A general program of studies may include instruction in both academic and vocational areas.

GED recipients: Persons who have obtained certification of high school equivalency because they have met State requirements and passed an approved exam, which is intended to provide an appraisal of their achievement or performance in the broad subject matter areas usually required for high school graduation.

Geographic regions: 1) Regions used by the Bureau of Economic Analysis of the U.S. Department of Commerce, the National Assessment of Educational Progress, and the National Education Association, as follows: (The National Education Association designates the Central region as Middle region in its classification.)

Northeast
Connecticut
Delaware
District of Columbia
Maine
Maryland
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Rhode Island
Vermont

Southeast
Alabama
Arkansas
Florida
Georgia
Kentucky
Louisiana
Mississippi
North Carolina
South Carolina
Tennessee
Virginia
West Virginia

Central (Middle)
Illinois
Indiana
Iowa
Kansas
Michigan
Minnesota
Missouri
Nebraska
North Dakota
Ohio
South Dakota
Wisconsin

West
Alaska
Arizona
California
Colorado
Hawaii
Idaho
Montana
Nevada
New Mexico
Oklahoma
Oregon
Texas
Washington
Wyoming

2) Regions and divisions used by the U.S. Bureau of the Census in Current Population Survey tabulations, as follows:

Northeast
(New England)
Maine
New Hampshire
Vermont
Massachusetts
Rhode Island
Connecticut

(Middle Atlantic)
New York
New Jersey
Pennsylvania

North Central
(East North Central)
Ohio
Indiana
Illinois
Michigan
Wisconsin

(West North Central)
Minnesota
Iowa
Missouri
North Dakota
South Dakota
Nebraska
Kansas

South
(South Atlantic)
Delaware
Maryland
District of Columbia
Virginia
West Virginia
North Carolina
South Carolina

West
(Mountain)
Montana
Idaho
Wyoming
Colorado
New Mexico
Arizona
Utah

Georgia
Florida

(East South Central)
Kentucky
Tennessee
Alabama
Mississippi

(West South Central)
Arkansas
Louisiana
Oklahoma
Texas

Nevada

(Pacific)
Washington
Oregon
California
Alaska
Hawaii

Gifted/talented: Students who by virtue of outstanding abilities are capable of high performance and who require differentiated educational programs and/or services beyond those normally provided by the regular school program.

Handicapped: Those children evaluated as having any of the following impairments, who because of those impairments need special education and related services. (These definitions apply specifically to data from the U.S. Office of Special Education and Rehabilitative Services presented in this publication.)

Deaf: A hearing impairment which is so severe that the student is impaired in processing linguistic information through hearing, with or without amplification, which adversely affects educational performance.

Deaf-blind: Concomitant hearing and visual impairments the combination of which causes such severe communication and other developmental and educational problems that they cannot be accommodated in special education programs solely for deaf or blind students.

Hard of hearing: A hearing impairment, whether permanent or fluctuating, which adversely affects a student's educational performance but which is not included under the definition of "deaf" in this section.

Mentally retarded: Significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period, which adversely affects a child's educational performance.

Multihandicapped: Concomitant impairments (such as mentally retarded-blind, mentally retarded-orthopedically impaired, etc.), the combination of which causes such severe educational problems that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf-blind students. This category includes those students who are severely or profoundly mentally retarded.

Orthopedically impaired: A severe orthopedic impairment which adversely affects a student's educational performance. The term includes impairments caused by congenital anomaly, disease, and from other causes.

Other health impaired: Limited strength, vitality, or alertness, due to chronic or acute health problems such as a heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, or diabetes, which adversely affects a student's educational performance.

Seriously emotionally disturbed: A condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance: an inability to learn which cannot be explained by intellectual, sensory, or health factors; an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; inappropriate types of behavior or feelings under normal circumstances; a general pervasive mood of unhappiness or depression; or a tendency to develop physical symptoms or fears associated with personal or school problems. The term includes children who are schizophrenic or autistic. The term does not include children who are socially maladjusted, unless it is determined that they are seriously emotionally disturbed.

Specific learning disabled: A disorder in one or more of the basic psychological processes involved in under-

standing or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or of environmental, cultural, or economic disadvantage.

Speech impaired: A communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, which adversely affects a student's educational performance.

Visually handicapped: A visual impairment which, even with correction, adversely affects a student's educational performance. The term includes both partially seeing and blind children.

High school: A secondary school offering the final years of high school work necessary for graduation, usually including grades 10, 11, 12 (in a 6-3-3 plan) or grades 9, 10, 11, and 12 (in a 6-2-4 plan).

Higher education: Study beyond the secondary school level at an institution that offers programs terminating in an associate, baccalaureate, or higher degree.

Higher education institutions (new classification):

Doctoral-granting: These institutions are characterized by a significant level and breadth of activity in commitment to doctoral-level education as measured by the number of doctorate recipients and the diversity in doctoral-level program offerings.

Comprehensive: These institutions are characterized by diverse post-baccalaureate programs (including first-professional), but do not engage in significant doctoral-level education.

General baccalaureate: These institutions are characterized by their primary emphasis on general undergraduate, baccalaureate-level education. They are not significantly engaged in post-baccalaureate education.

Specialized: These baccalaureate or post-baccalaureate institutions are characterized by a programmatic emphasis in one area (plus closely related specialties), such as business or engineering. The programmatic emphasis is measured by the percentage of degrees granted in the program area.

2-year: These institutions confer at least 75 percent of their degrees and awards for work below the bachelor's level.

Non-degree granting: These institutions offer undergraduate or graduate-level study, but do not confer degrees or awards.

Higher education institutions (traditional classification):

Four-year institutions: A higher education institution legally authorized to offer and offering at least a 4-year program of college-level studies wholly or principally creditable toward a baccalaureate degree. Within this category, a university is a postsecondary institution which typically comprises one or more colleges and one or more graduate professional schools.

Two-year institutions: A higher education institution legally authorized to offer and offering at least a 2-year program of college-level studies which terminates in an associate degree or is principally creditable toward a baccalaureate degree.

Junior high school: A separately organized and administered secondary school intermediate between the elementary and senior high schools, usually including grades 7, 8, and 9 (in a 6-3-3 plan) or grades 7 and 8 (in a 6-2-4 plan).

Labor force: All persons who are either employed as civilians, unemployed, or in the Armed Forces during a specified time.

Labor force participation rate: The labor force participation rate is the percent of the civilian noninstitutional population in the labor force.

Limited-English proficient (LEP): Children of non-English language background or language minority who have sufficient difficulty speaking, reading, writing, or understanding the English language to deny such individuals the opportunity to learn successfully in classrooms where the language of instruction is English. As used in this publication, it is defined as scoring below a certain cut-off point on a test designed to measure English proficiency.

Master's degree: An earned degree carrying the title of Master. One type of Master's degree—including the Master of Arts degree (M.A.) and the Master of Science degree (M.S.)—usually is awarded in the liberal arts and sciences for advanced scholarship in a subject field or discipline and demonstrated ability to perform scholarly research. A second type of master's degree is awarded for the completion of a professionally-oriented program (e.g., in education (M.Ed.), in business administration (M.B.A.), in fine arts (M.F.A.), in music (M.M.), in social work (M.S.W.), in public administration (M.P.A.), and in other fields). A third type of master's degree is awarded in professional fields for study beyond the first-professional degree (e.g., the Master of Laws (LL.M.) and Master of Science in various medical specializations).

Mean test score: The score obtained by dividing the total sum of scores of all individuals in a group by the number of individuals in that group.

Metropolitan-nonmetropolitan residence: The population residing in standard metropolitan statistical areas (SMSA's) constitutes the metropolitan population. Except in New England, an SMSA is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county, or counties, containing such a city or cities, contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England SMSA's consist of towns and cities, rather than counties.

Migration: Movement of students into or out of State to attend college. Net migration equals the number of students who come into a State minus the number of students who leave the home State to attend college.

Microcomputer: Small, self-contained "personal" computer including at least a TV-like screen and typewriter keyboard.

Minimum-competency testing: Measuring the acquisition of competence or skills to or beyond a certain specified standard.

Newly qualified teacher: A person who has met the specific requirements of a State or other authorizing agency, has received certification from a State, regional, or national accrediting body, and thus is considered eligible and qualified to instruct students.

Noncollegiate postsecondary school with occupational programs: A non-degree granting institution (or an institution offering a degree that is not recognized as a collegiate degree by the appropriate regional accrediting commission) offering instruction in vocational and technical education only, and whose educational programs are terminal in nature. Such institutions generally have no provision for the development of transfer programs to either 2-year or to 4-year institutions of higher education.

Non-resident alien: A person who is not a citizen of the United States and who is in this country on a temporary basis and does not have the right to remain indefinitely.

Not in the labor force: Any civilian, 14 years old or over, who is not classified as employed or unemployed (i.e., seeking work), including any person engaged only in own-home housework, attending school, or unable to work because of long-term physical or mental illness; persons who are retired or too old to work; seasonal workers for whom the survey week fell in an off-season, and the voluntarily idle.

Occupational vocational education courses: Vocational courses that prepare participants for specific semiskilled, skilled, or technical occupations. For example, while Typing I was considered exploratory, Typing II was classified as an occupational course.

Part-time students: Students who are carrying less than a full course load, as determined by the State, local school system, or institution.

Preprimary program: A set of organized educational experiences for children attending prekindergarten and kindergarten classes including Head Start programs.

Primary school: A separately organized and administered elementary school for students in the lower elementary grades, usually including grade 1 through grade 3 or the equivalent, and sometimes including preprimary years.

Private school: A school which is controlled by an individual or by an agency other than a State, a subdivision of a State, or the Federal government, usually which is supported primarily by other than public funds, and the operation of whose program rests with other than publicly elected or appointed officials.

Proprietary school: An educational institution that is under private control and whose profits derived from revenues are subject to taxation.

Public school: A school operated by publicly elected or appointed school officials in which the program and activities are under the control of these officials and which is supported primarily by public funds.

Racial/ethnic group: Classification indicating general racial or ethnic heritage based on self-identification as in data collected by the Bureau of the Census or on observer identification as in data collected by the Office for Civil Rights. These categories are in accordance with the Office of Management and Budget standard classification scheme presented below:

White: A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Black: A person having origins in any of the black racial groups of Africa.

Hispanic: A person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race.

Asian or Pacific Islander: A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, China, India, Japan, Korea, the Philippine Islands, and Samoa.

American Indian or Alaskan Native: A person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition.

Regular day school: State-approved elementary/secondary school offering at least one grade beyond kindergarten, attended by students during a part of the day, as distinguished from a residential school. Not included in this category are residential schools for exceptional children, Federal schools for Indians, federally operated schools on Federal installations, and subcollegiate departments of institutions of higher education.

Religiously affiliated school: A private school which in most cases a parent church group exercises some control over or provides some form of subsidy to the school. Catholic schools include those affiliated with the Roman Catholic Church, including the "private" Catholic schools operated by religious orders. Other affiliation includes schools associated with other religious denominations. An unaffiliated school is usually privately operated or under control of a board of trustees or directors.

Remedial courses: Planned diagnostic and remedial activities for individual students or groups of students, designed to correct and prevent further learning difficulties which interfere with the student's expected progress in developing skills, understandings, and appreciations in any of several required courses.

Revenues: All funds received from external sources, net of refunds, and correcting transactions. Noncash transactions such as receipt of services, commodities, or other receipts "in kind" are excluded, as are funds received from the issuance of debt, liquidation of investments, and nonroutine sale of property.

Salary: The total amount regularly paid or stipulated to be paid to an individual, before deductions, for personal

services rendered while on the payroll of a business or organization.

School: A division of the school system consisting of students comprising one or more grade groups or other identifiable groups, organized as one unit with one or more teachers to give instruction of a defined type, and housed in a school plant of one or more buildings.

School district: An educational agency at the local level that exists primarily to operate public schools or to contract for public school services. This term is used synonymously with the terms "local basic administrative unit" and "local education agency."

Secondary school: A school comprising any span of grades beginning with the next grade following an elementary or middle school and ending with or below grade 12.

Secondary vocational education participation pattern: Classification developed by the National Center for Research in Vocational Education to profile vocational education participation of secondary students, as follows:

1) *Concentrators:* Students who take an average of 6 Carnegie units in vocational education courses over a 3-year period;

2) *Limited Concentrators:* Students who take about 3 units in 2 years, generally in the 11th and 12th grades;

3) *Concentrator/Explorers:* Students similar to limited concentrators, except that their vocational coursework is usually completed early in the high school years;

4) *Explorers:* Students who take vocational courses in one or more program areas but do not take enough in any one area to achieve a specialization;

5) *Incidental/Personal:* Students who average less than a full unit and generally complete the coursework in one semester.

Students in each of the three concentrator patterns took at least half of their vocational coursework in a particular vocational specialty.

Senior high school: A secondary school offering the final years of high school work necessary for graduation and invariably preceded by a junior high school.

Socioeconomic status (SES): For the High School and Beyond and the National Longitudinal studies, the SES index is a composite of five equally weighted, standardized components: father's education, mother's education, family income, father's occupation, and household items. The terms high, medium, and low SES refer to the upper, middle two, and lower quartiles of the weighted SES composite index distribution.

Source of funds: Identifies the agency, governmental or otherwise, which appropriates the money used by a local school or local educational agency.

Special education: Direct instructional activities or special learning experiences designed primarily for students identified as having exceptionalities in one or more aspects of the cognitive process and/or as being underachievers in relation to the general level or mode of their overall abilities. Such services usually are directed at studentswith the following exceptionalities: (1) physically handicapped; (2) emotionally handicapped; (3) culturally different, including compensatory education; (4) mentally retarded; (5) students with learning disabilities. Programs for the mentally gifted and talented are also included in some special education programs.

Standardized test: A test composed of a systematic sampling of behavior, having data on reliability and validity, administered and scored according to specific instructions, and capable of being interpreted in terms of adequate norms.

Standardized test performance: The weighted distributions of composite scores from standardized tests used to group students according to performance.

State education agency operations: Activities performed for the purpose of executing the responsibilities of the State educational agency, an organization established by law for the primary purpose of carrying out at least a part of the educational responsibilities of a State.

State university: A university controlled by a State that emphasizes undergraduate and graduate instruction in the liberal arts and in professional schools such as those of law, medicine, education, and commerce. Contrasts with a land-grant college, which emphasizes agriculture, engineering, and professional curricula based chiefly on the sciences.

Student education expenditures (higher education): Expenditures for formal instruction and activities that are most closely related to instruction. Includes instruction and research that are part of regular instructional services (departmental research), extension and public service, libraries, physical plant operation and maintenance, general administration, and other sponsored activities.

Suspension: Temporary dismissal of a student from school by duly authorized school personnel in accordance with established regulations.

Teacher preparation programs: As used in this publication, departments, schools, and institutions of higher education that confer degrees in education.

Teaching candidate: Student taking a course of studies which is designed to prepare him/her for the teaching profession and which usually leads to the attainment of a teaching certificate, approved by a State, regional, or national accrediting body.

Technical training institute: An educational institution at the postsecondary level that offers specialized education in one or more fields to prepare individuals for employment in positions between those of the skilled worker or craftsman and the professional scientist or engineer. The programs at these institutions may lead to an associate degree.

Transcript: An official list of all courses taken by a student at a school or college showing the final grade received for each course, with definitions of the various grades given at the institution.

Tuition and fees: A payment or charge for instruction, or compensation for services, privileges, or for the use of equipment, books, or other goods.

Unclassified students (higher education): Not candidates for a degree or other formal award, although taking courses for credit in regular classes with other students.

Undergraduate students (higher education): Students registered at an institution of higher education who have not completed requirements for a bachelor's degree.

Unemployed: Civilians who, during a survey period, had no employment but were available for work and (1) had engaged in any specific jobseeking activity within the past 4 weeks, or (2) were waiting to be called back to a job from which they had been laid off, or (3) were waiting to report to a new wage or salary job within 30 days.

Unemployment rate: The number of unemployed persons seeking employment as a percent of the civilian labor force.

VEA programs: Programs receiving Federal assistance administered by the States under the provisions of the Vocational Education Act, as amended.

Vocational program: A program of studies designed to prepare students for employment in one or more semiskilled, skilled, or technical occupations.

Vocational programs classification: Vocational education programs are usually categorized into one of the following areas:

Agriculture: Instruction designed to improve competencies in agricultural occupations. Included is the study of agricultural production, supplies, mechanization and products, ornamental horticulture, forestry, and the services related thereto.

Business: Program of instruction that prepares individuals for a variety of activities in planning, organizing, directing, and controlling all business office systems and procedures. May include instruction in preparing, transcribing, systematizing, and preserving written communications and records; preparing and analyzing financial records; collecting accounts and receiving and disbursing money; gathering, processing and distributing information and mail; operating office

machines and electronic data processing equipment; storing, distributing, and accounting for inventories of materials; operating telephone switchboards and delivering messages; and performing other business office duties.

Consumer and homemaking: Study concerned with the economic welfare of the consumer and consumer groups in everyday life, e.g., competency in managing money, purchasing and using goods and services, banking, investments, credit, and the role of the consumer in the economy.

Health: Related courses organized to prepare students for assisting qualified personnel in providing diagnostic, therapeutic, preventive, restorative, and rehabilitative services to people, including understanding and skills essential to provide care and health services to patients.

Industrial arts: Related courses organized for the development of understanding about the technical, consumer, occupational, recreational, organizational, managerial, social, historical, and cultural aspects of industry and technology.

Marketing: The area of study dealing with the flow of goods and services from the producer to the consumer and related activies such as salesmanship, advertising, and retailing.

Technical: Program of instruction that normally includes the study of underlying sciences and supporting mathematics inherent in a technology, as well as methods, skills, and materials commonly used and services performed in the technology. Technical education prepares for the occupational area between the skilled craftsman and the professional person such as the physician, the engineer, and the scientist.

Trade and industrial: Vocational education concerned with preparing persons for initial employment, or for upgrading or retraining workers in a wide range of trade and industrial occupations. Such occupations are skilled or semiskilled and are concerned with designing, producing, testing, maintaining, or repairing any product or commodity.

Vocational home economics: Courses of instruction emphasizing the acquisition of competencies needed for getting and holding a job and/or preparing for advancement in an occupational area using home economics knowledge and skills.

	Page in Edition			
	1984	1983	1982	1981
A				
Achievement tests (see also: specific subject area and National Assessment of Educational Progress):				
college entrance exams			111,113	135,137
in mathematics:				
high school students	53,55		195,197	111
9-, 13-, 17-year-olds	53,55		187,189	
students in grades 1 to 6			175,177,181	
in music			191	
in reading:				
high school students			193	111
9-, 13-, 17-year-olds		53-57	183,185	
students in grades 1 to 6			175-179	
in science	57			111
in vocabulary			193,199	111
in writing				109,111
of college-bound seniors		223		
of first-graders and relationship to preprimary education			173	
Administrative unit (see: School districts)				
Adult education:				
courses:				
by source of payment		171		
by subject area		167		
by type of provider		171		25
participants:				
as percent of adult population		157-165	35	
by age		157,159		
by credit objectives	69	169		
by educational attainment	145	161		37
by family income		163		
by racial/ethnic group		159,161		
by reasons for participation		169		
by sex		159,161		
in vocational programs				193
number		157-165		
Aid, Financial, institutions of higher education (see: Financial aid)				
Attitudes (see also: Opinions)				
of students toward school subjects			201,203	

	Page in Edition			
	1984	1983	1982	1981
of students toward life goals			205	
Average daily attendance			63	
B				
Bachelor's degrees:				
by control of institution			141	
by field of study	91,93			159
by racial/ethnic group	87			155
by sex	89,93	117		155
in education	91	185-189,193	97	
number	87-91	117,121	141	155,159
Basic administrative units (see: School districts)				
Bilingual programs (see: Federal education programs)				
Blacks (see specific subject area, by racial/ethnic group)				
Busing for racial balance (see: Integration)				
C				
Career development		145,147		127
Carnegie units earned by high school graduates	113-119,163, 169,171			
Civil court cases involving students			67	
Classroom teachers, public elementary/ secondary schools (see: Teachers)				
College enrollment (see: Enrollment, higher education)				
College entrance exams			111,113	135,137
College faculty (see: Faculty, higher education)				
Commercial schools			137,143	
Competency testing:				
of students	179	65	75	89
of teachers		67	115	77
Computer-assisted instruction (see also: Teaching methods	173	41		
Consumer Price Index, related to education expenditures	51,83	45,113		173

	Page in Edition			
	1984	1983	1982	1981
Cost of education (see: Tuition/fees, Expenditures)				
Curriculum (see also: Special programs):				
elementary schools				91,93
secondary schools	113-119, 163-171	35-39,143,145	69,79	97
D				
Degrees earned:				
by control of institution		121	141	
by level:				
associate		123		
bachelor's:				
by control of institution		121	141	
by field of study	91,93			159
by racial/ethnic group	87			155
by sex	89,93	117		155
by State		121		
in education	91	185-189,193	97	
number	87-91	117,121	141	155,157
doctorate:				
by control of institution			141	
by field of study	91,93			159
by racial/ethnic group	87			157
by sex	93,97	117		157
in education	91	185-189,193	97	
number	87,91,97	117	141	157,159
first-professional:				
by field of study	101	119		161
by racial/ethnic group	87			157
by sex	99,101	119		157
number	87,99,101	119	141	157,161
master's:				
by control of institution			141	
by field of study	91,93			159
by racial/ethnic group	87			155
by sex	93,95	117		155
in education	91	185-189,193	97	
number	87,91,95	117	141	155,159
by State		121		
major field of study	91			157,159,161

	Page in Edition			
	1984	1983	1982	1981
projections	89,95-99			
Discipline:				
actions taken		63		117
civil cases involving students			67	
problems reported by school administrators			71	
Districts, school (see: School districts)				
Doctorate degree:				
by control of institution			141	
by field of study	91,93			159
by racial/ethnic group	87			157
by sex	93,97	117		157
in education	91	185-189,193	97	
number	87,91,97	117	141	157,159
Dropouts:				
by age				31,55
by language background				31
by metropolitan status	155			35
by nativity				31
by racial/ethnic group	155,157			31,35
by reason for leaving school	157			
by sex	155,157			235
employment status				235
Drug/dope problem (see: Opinions)				
E				
Earnings (see: Income, Salaries)				
Educational attainment:				
and employment			215,217	217,231-235, 245
and poverty	139			
by ability				131
by age group	135,137,145		21,23	37
by aspiration			209	
by high school curriculum				213
by racial/ethnic group	137		23,209	33,129
by region				33
by sex	137		209	
by socioeconomic status			209	131
by State	135			
of adult education participants		161		37

	Page in Edition			
	1984	1983	1982	1981
of family head				29,151
Educational plans:				
of high school students	159	89,147,211	33,207-213	127,209
of occupational education students		147		
Elementary and Secondary Education Act (see: Federal education programs)				
Elementary/secondary schools (see: Public schools and Private schools)				
Employment (see also: Unemployment):				
by educational attainment			215,217	217,231-235, 245
by major occupational groups	111		215	215,233
of recent college graduates		125-129		
projections	111			
use of vocational training	121	145		211,217
Endowments, market value			151	
English courses			79,193	
Enrollment:				
adult education	69,145	157-165	35	
and labor force status	125,127		27	
by age				27
by level			11	11,59
by school size				15
elementary/secondary school:				
by age				27
by control of school	15	17,19	45,53,55	11,63
by grade span	15,17,31	15	45	
by metropolitan status			55	63
by racial/ethnic group	19	23		65,67,115
by region			53,55	63,115
by State	17	15-19	49	59
handicapped	25	25,33		269,273,275, 279,283
limited-English proficient		25		
number	15	15,17	9,45-49,53,55	11,59,63, 65,115
higher education:				
by age	71,73,125		25,129	27
by attendance status	71,73	81,85	129	143
by control of institution	71,75	81,85	129	11,17,165
by level	71,75,77,161	81,85	135	

	Page in Edition			
	1984	1983	1982	1981
by marital status			29	
by parental education				151
by parental income				153
by racial/ethnic group	77,161	87	133,135	149-153
by sex	71,73,125,161	81	9,129,131	147
by size of institution				17
by State		83-87		145
by type of institution	71,75,123,161	81,85	139	17,143, 165
first-time		91	31,131	147
foreign students	77		135	
number	69-77	81,85	11,25,129, 131,135	143
percent of high school graduates			133	
projections	71,73		11,129	
in Federal programs		141,151,155	145,147	
noncollegiate postsecondary schools (see: Vocational/technical education)				
postsecondary	69,123-127,161		31,129,135, 139,143,145	
preprimary:				
by age	27		13-17	27
by control of school	27			
by education of adult household member			173	
by labor force status of mother			17	
by metropolitan residence			15	
by State	29	21		
number	27,29		11,13	197,199
projections:				
elementary/secondary	15,27		11,45	
higher education	71,73	81	11,129	143
vocational/technical education:				
by control of institution	113	141	143	
by program	117,119	151	143-147	193
by racial/ethnic group	125,127,161	155	147	207
by sex	125,127,161		147	207
by type of institution	69,125,127	141	143,145	193
in Federal programs		141,151,155	145,147	195

	Page in Edition			
	1984	1983	1982	1981
Ethnic groups (see specific area, by racial/ethnic group)				
Expenditures:				
by financial character of school districts		47		
by source of funds		153		171
by State, per pupil	41,43	47,49		101,103
change in governmental expenditures		153		
institutions of higher education	85	109,113,115	153,155	171,173
per pupil, elementary/secondary	41,43	47,49	63	169,171
per student, higher education	85		153,155	173
public elementary/secondary schools	49	47,49	61,63	101,103
salaries of classroom teachers	51			
F				
Faculty, higher education:				
by type of institution	79			
collective bargaining agreements and agents		105,107		
estimated demand		99		
number	79	99		
projections	79			
salaries		101,103		175,177
Federal education programs:				
bilingual services			69	79
of low income areas (i.e., Title I)			59	
percent participating		141,155		79,87,141
special education	25			141,259,261, 279,281
student financial aid			165	141
vocational education		139,141, 151,155	147,157	195
Federal sources, receipts from:				
all levels of education				13
higher education	81	109	149	13
public elementary/secondary schools	45,47	43	57	13,99
Fees, higher education students (see: Tuition/fees)				
Finance (see: Expenditures, Income, Salaries)				

	Page in Edition			
	1984	1983	1982	1981
Financial aid, higher education:				
action taken by parents			163	
by family income				141
by type of aid				141
from Federal Government			165	141
First-professional degrees	87,99,101	119	141	159
First-time college students:				
degree aspirations		219		
migration		91		
number			131	147
time elapsed since graduation			11	
Funds, Federal, for education (see: Expenditures, Federal sources, Federal programs)				
G				
GED certificate recipients	147	61		
Grades			77	
Graduates:				
college:				
labor force participation		125-129	215,217	233,235
number		117-123		
salary		129	219-223	
high school:				
by control of school	59	59	19	
by racial/ethnic group			133	13
by region				13
by sex	59	59	19	113
by State		59,61		
interest in postsecondary education				127
labor force participation			215,217	233,235
most recent job	121			
number	59	59	19,133	
percent who met NCEE curricular recommendations	165,167			
salary			219,221	
units earned in basic academic subjects	169			
units earned in selected subjects	163,171			
vocational units earned	113-119			

	Page in Edition			
	1984	1983	1982	1981
Graduation requirements:				
for high school students	175,177			
for State university admission	181			
H				
Handicapped population:				
accommodations for				285
alternative placements				287
by State		25,33		269
by type of disability	25			271-277
enrolled	25	25,33		271-277, 281,283
Federal programs for			69	279,281
personnel serving				291
services provided				289
Hispanic origin (see specific subject area, by racial/ethnic group)				
I				
Immigrants	141			
Income (see also: Salaries):				
as percent of average student charges			159	
by educational attainment		149	219-223	
by racial/ethnic group				153
by sex		149	219-221	
related to education expenditures				139
Individualized instruction (see: Teaching methods)				
Institutions of higher education:				
by control		93,95	137	17,163
by size				17
by State		93		163
by summer and evening sessions offered				167,169
by type		93,95	137	17
closings		97		
conferring degrees in education		195,197		
credentials required for admission				133,135
endowment			151	171
enrollment (see: Enrollment, higher education)				

	Page in Edition			
	1984	1983	1982	1981
expenditures	85	113,115	153,155	171,173
number		93,95	137	163
price indexes				173
revenues	81	109,111	149	171
tuition/fees	83		149,159	139
Instructional radio			19	
Instructional staff, elementary/secondary schools (see: Teachers)				
Instructional staff, higher education (see: Faculty, higher education)				
Instructional television				19
Integration:				
busing for racial balance			73	
in public schools				61
J				
Job satisfaction:				
of public school teachers			105	
of young adults				217
K				
Kindergarten, enrollment (see: Enrollment, preprimary)				
L				
Labor force:				
and school enrollment status	125,127		27	
by sex	125,127			231,235
educational attainment of				231-235
participation of high school students				235,237
participation of recent college graduates		125-129		235,241,243
participation of young adults			207	235
Labor unions, as providers of adult education		171		
Language usage:				
of adult population	143			
of school-age population	21,23			79
Libraries, public				23
Litigation (see: Civil court cases)				

	Page in Edition			
	1984	1983	1982	1981
Local sources, receipts from:				
higher education	81	109	149	13,171
public elementary/secondary schools	45	43	57	13
Low income areas, Federal services to (see: Federal education programs)				
M				
Master's degrees:				
by control of institution			141	
by field of study	91,93			159
by racial/ethnic group	87			155
by sex	93,95	117		155
in education	91	185-189,193	97	
number	87,91,95	117	141	155,159
Mathematics:				
achievement:				
by age group	53,55		187,189	
by educational attainment			199	
by parental education			177	
by racial/ethnic group	53,55		175,187	
			193-199	
by sex			195,199	
by socioeconomic status			195	
of first-graders			173	
of grade school students	53,55		175,177,181	
of high school students	53,55		195,197	
attitudes of grade school students			201	
offerings and enrollment		35,39	207	91,93
required courses	177,181			
time spent in instruction, in elementary schools			177,181	
units earned by high school graduates	163			
Minimum-competency testing (see: Competency testing)				
Minorities (see subject headings)				
Museums				21
N				
National Assessment of Educational Progress:				
mathematics	53,55		187,189	
music			191	

	Page in Edition			
	1984	1983	1982	1981
reading		53-57	183,185,203	
science	57			
writing				109
Noncollegiate postsecondary education (see: Vocational/technical education)				
Nonpublic schools (see: Private schools)				
O				
Occupational groups	111		215	233
Occupational programs (see also: Vocational/technical education):				
by type of program		151	145,147	
enrollment size		141,151		
number of schools offering		139	137	
outcomes	121,123			
participation in:				
by racial/ethnic group	115,125,127	155		
by type of program	119	151	145,147	
by units earned	113-119			
Opinions:				
of parents toward financial responsibility for child's education			161	
of parents toward public schools		71	109	
of teacher graduates on labor market		217		
of young adults toward high schools				251,253
on confidence in people running institutions				43
on cost-cutting measures in public schools		51		
on financial support of public schools			65	
on importance of education				245,247
on leaders in American institutions				43
on major educational problems				41
on outside influences on children's education				251
on priorities for U.S. Department of Education				47
on private schools			81	
on public expenditures			65,81	45
on public schools, school personnel, and parents			109	

	Page in Edition			
	1984	1983	1982	1981
on quality of public education				39
P				
Parents:				
action taken to pay for child's post-secondary education			163	
expectations for child			163	
Per-pupil expenditures (see: Expenditures, per pupil)				
Population:				
age distribution			9,127	
foreign born	141			
in poverty	139			
language minority	21,23,143			
participation in education (see: Enrollment)				
projections			9,127	
school-age:				
by age group			9	
by language usage	21,23			
by racial/ethnic group			133	
handicapped	25			
Postsecondary education (see: Adult education, Institutions of higher education, Vocational/technical education):				
Preprimary education:				
enrollment:				
by age	27		13,17	
by control of school	27			
by education of adult household member			173	
by labor force status of mother			17	
by metropolitan residence			15	
by State	29	21		
number	27,29			
outcomes			173	
Price indexes, higher education	85			173
Private schools:				
elementary/secondary schools:				
enrollment	15	17,19	45,53,55	63,65,71
instructional staff	33-37			

	Page in Edition			
	1984	1983	1982	1981
number				67
participation in Federal programs				87,259, 261
school size				67
tuition and fees				105,107
institutions of higher education:				
endowments, market value			151	
enrollment	71,75	81,85	139	191
expenditures	85	113,115	153,155	171
number		93,95	137	17
revenues	81	109,111	149	13,171
tuition/fees	83		149,159	
noncollegiate postsecondary schools:				
enrollment		141	143	
number		139	137	191
Professional degrees (see: First-professional degrees)				
Projections (see specific subject areas)				
Public opinion (see: Opinions)				
Public schools:				
elementary/secondary schools:				
enrollment:				
by expenditure		47		
by level	15	15	45	11
by metropolitan status			55	63
by racial/ethnic group	19			
by region			53,55	63
by size				15
by State	17	15-17	49	59
expenditures	41,43,49	47,49	61,63	101,103
Federal program participants				259,261
instructional staff	33-39,51	181	45,47,93,95	
number	31	27	47,51	69,191
organization	31			69
revenue receipts	45,47	43	57,59	13,99
student-teacher ratio	35	31	47	71,73
with computers	173	41		
institutions of higher education:				
enrollment	71,75	81,85	139	11,165
expenditures	85	113,115	153,155	171,173
number		93,95	137	17,163

	Page in Edition			
	1984	1983	1982	1981
revenues	81	109,111	149	171
tuition/fees	83		149,159	139
noncollegiate postsecondary schools:				
enrollment		141	143	
number		139	137	191
Public school systems (see: School districts)				
R				
Reading (see also: Achievement test, National Assessment of Educational Progress):				
activities of 9-, 13-, 17-year-olds			203	
attitudes toward			201,203	
performance:				
by age group		53-57	183,185	
by Hispanic background		55		
by race and region		53,57		
of first-graders			173	
of high school students			193	
of students in grades 1 to 6			175-179	
within lowest and highest reading group		57		
time spent in instruction, in elementary schools			177	
Regular day schools (see: Private schools, Public schools)				
Remedial courses (see: Special programs or specific subject area)				
Revenue receipts:				
by State	45	43	59	99
from Federal sources	45,47	43,109,111	57,59, 149	13,99, 171
from State and local sources	45	43,109,111	57,149	13,99, 171
of institutions of higher education	81	109,111	149	13,171
of public elementary/secondary schools	45,47	43	57,59	13,99
S				
Salaries:				
by field of degree			223	
by sex		149	219	

	Page in Edition			
	1984	1983	1982	1981
by socioeconomic status			219	
elementary/secondary education	51		103	
higher education		101,103		175,177
of bachelor's recipients		129	223	
of doctoral recipients			223	
of full-time workers		129		
projections			103	
Scholarships (see: Financial aid, Higher education)				
School districts:				
by enrollment size		29		
expenditures		47		101
improvement		69		
School finance (see: Finance)				
Schools, number of:				
elementary/secondary	31	27	47-51	15
higher education		93,95		17,133,163
noncollegiate postsecondary		139		191
Science:				
offerings and enrollment		35		91,93
performance:				
by age group	57			
by racial/ethnic group	57			
of grade school students	57			
of high school students	57			
required courses	177,181			
units earned by high school graduates	163			
Social studies, required courses	181			
Special education (see also: Handicapped population)	25	25,33	69	141,259, 261,279, 281
Special programs		25,33,39	69,79	
Staff (see: Faculty, Teachers)				
State government expenditures		153		
State sources, receipts from:				
elementary/secondary schools	45	43	57	13,99
higher education	81	109,111	149	13
Student fees (see: Tuition/fees, Expenditures)				

	Page in Edition			
	1984	1983	1982	1981
Students (see: Enrollment)				
Student loans, higher education (see: Financial aid, higher education)				
T				
Teachers:				
elementary/secondary school:				
by age group			91	
by assignment			101	
by experience		203		
by racial/ethnic group			93,95	
by State	39		93,95	
competency-based certification		67	115	77
layoffs and shortages			101	
measures to improve candidate quality		199,201		
newly graduated candidates		191,207-213		
number	33-39	181	47,101,103	73,75
opinions about teaching			105,107	
reasons for not applying to teach		217		
recent bachelor's recipients, by sex and racial/ethnic group		205		
recent bachelor's recipients not teaching		215		
relation of work to major field of college study		209,213		
salaries	51		103	
student-teacher ratio	35	31	47	71,73
supply-demand	37	183		75
higher education (see: Faculty)				
Teaching machines (see: Teaching methods)				
Teaching methods			83	
Technical education, vocational (see: Vocational/technical education)				
Television (see: Instructional television)				
Title I (see: Federal education programs)				
Tuition/fees:				
institutions of higher education	83		149,159	
revenue source	81	109	149	
undergraduate	83		159	139

	Page in Edition			
	1984	1983	1982	1981
U				
Unemployment rate:				
by sex			217	235,255,257
by educational attainment			217	235,255, 257,263
recent college graduates		125		
V				
Vocabulary (see also: Achievement tests):				
performance of high school students			193,199	
Vocational/technical education:				
enrollment:				
by age	125,127			
by control		141	143	193
by program	117,119	145,151	145,147	193,195,207
by racial/ethnic group	125,127,161	155	147	207
by sex	125,127,161	143,145	147	207
by type of institution	69,123	141	143,147	
federally aided programs		141,151,155	147	195
number	125,127	141,151,155	143,147	193
conditions of facilities				201
expenditures for instruction			157	
instructional staff				203,205
number of schools		139	137	191,197,199
vocational units earned by public high school graduates	113-119			
W				
Wages (see: Income, Salaries)				
Work, education and	121	125-129	215,217	231-263
Writing achievement				109
Y				
Years of school completed (see: Educational attainment)				